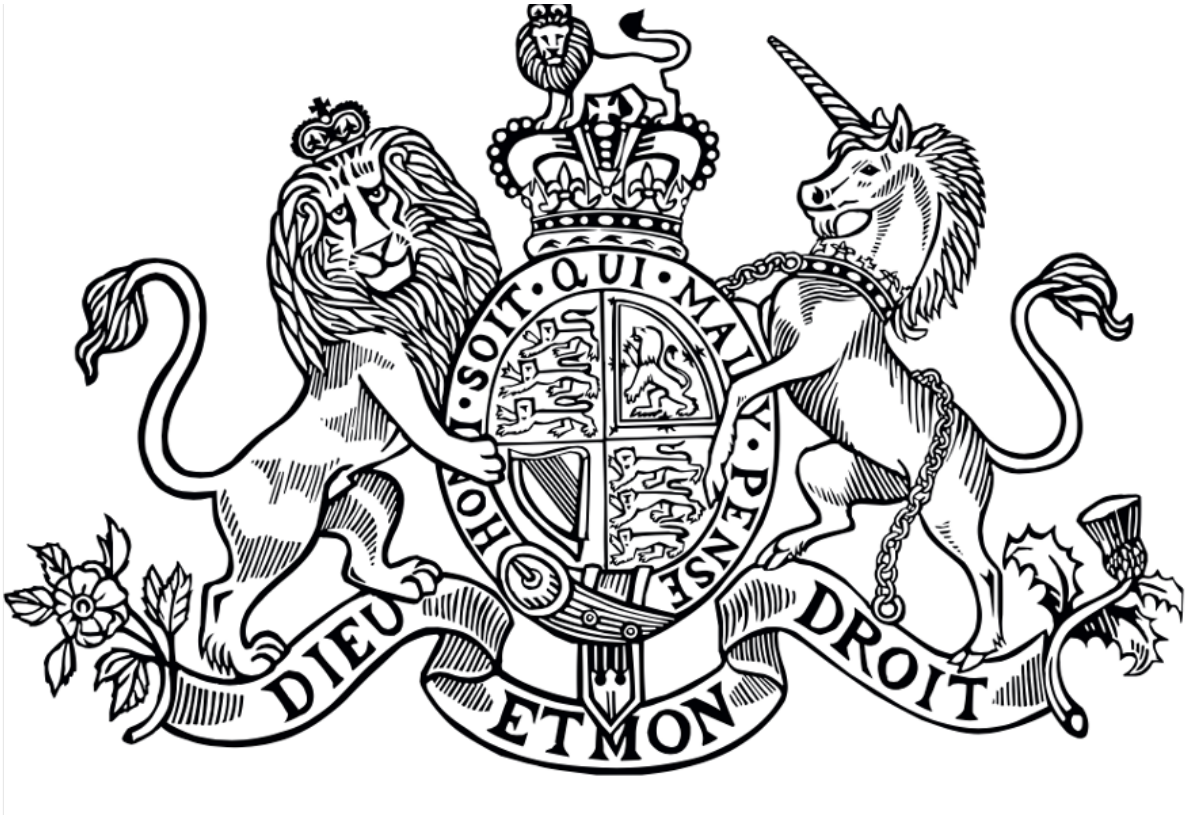

From Public Policy to Public Value: How Design Practice Supports the Identification and Creation of Public Value in the International Policy-Making Context

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Abstract

Earlier attempts to innovate in public policy have focused on making policy and its services more efficient (e.g. New Public Management). Today, reemphasized by 21st century's ad hoc or permanently present, sophisticated issues that policy needs to solve for - be they the governance of new technologies, a global pandemic, growing inequality, and their impact on society, or climate change - we witness yet another fundamental paradigm shift: calls upon policy to optimize for achieving greater public value (e.g. Mazzucato 2018, Bason 2018).

With the latter implying that 'the public', i.e. the policy recipients or "policy users", be at the core of each policy decision to be made and to create for, the policy sector has turned to the design space to emphasize inclusion of user perspectives in its making. It has adopted approaches from design thinking, design research, service design to policy prototyping, to close the gap between itself and the policy recipients. Most of the research and practice in design for policy to date has focused, however, on design inserted as a tool or mechanism (e.g. to innovate) into existing policy-making approaches (e.g. policy cycle). The research presented in this thesis adopts a strategic stance and asks whether design can enhance policymaking in its core underlying function; that is the identification and creation of value for the public.

This PhD adopts an interdisciplinary approach to the examination of policy making, policy design and public value. Through three exploratory policy case studies at the international governance scene (semi-structured interviews, field notes and observations, survey) - the EU Policy Lab, the World Economic Forum C4IR, and a global, design-led governance initiative at a worldwide leading tech company (kept anonymous) - it highlights the role of design in filling knowledge gaps and addressing forward-looking challenges, applied to AI- and tech-related policymaking in particular. It looks at design as a matter of individual and collective value association and understands value and meaning based on individuals` (subject) value associations with regards to a particular policy topic or theme (object).

The PhD argues that design practice in policy making brings actors back to the center stage. It highlights the importance of actor perspectives and value ascriptions in shaping policy content. It finds that design helps integrate alternate lived realities into the creation of policy content. By actively seeking out and acknowledging non-, under-, or misrepresented realities and value associations, it promotes inclusivity in international policy-making processes. It helps to bridge gaps in understanding and promotes dialogue and collaboration, closing

thereby bounded rationalities. That leads to a more comprehensive and accurate representation of the various actors` viewpoints involved, and thus the policy topic at hand. By engaging in design practice, policy decision makers gain a more nuanced understanding of different stakeholders and their viewpoints. By leveraging design, policy can demonstrate and propose tangible examples, ideas, and narratives that highlight the value to be generated through policy, for whom it is intended, and how it can be implemented. Design activates, legitimizes, and bridges traditional (horizontal) and emerging (vertical) actors in the international governance arena, thereby enriching the policymaking process.

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Abbreviations and definitions

Nota bene: Definitions are the researcher's in the context of her study, based on existing literature/ knowledge.

Theory and empirical context

AI	Artificial Intelligence
Intl.	International
Gov.	Governance
Intl. gov.	International governance
PV	Public value
PVT	Public value triangle
PVT model	Public value triangle model
CG	Collective governance
PG	Public governance
Pol	Policy/regarding policy - The idea of society of tomorrow, a vision about the latter. *Note:* Policy refers to public policy if not specified otherwise (e.g. as product policy). Public policy is made in conjunction with the private and other sectors' actors; it is not a public sector task only.
EU	European Union
EPL	EU Policy Lab
EC	European Commission
WEF	World Economic Forum
The Forum	World Economic Forum
C4IR / The Centre	Centre for the 4th Industrial Revolution
An	Anonymized
AnCIII	Anonymized Case study III, globally operating tech industry

HQ	Headquarter
Host org.	Host organization of the designing lab/team and that the lab/team is a part of

Knowledge gap

IV	Individual value
CV	Collective value
PV	Public value
BR	Bounded rationality

Findings

EBPM	Evidence-based policymaking
DAA	Drones & Autonomous Airspace
Prec. Med.	Precision medicine
AI	Artificial intelligence
ADM	Automated decision-making
NEET	Not in employment, education, or training

1. Introduction

1.1. Context

The world is increasingly being compared to a pool that drowns in an endless amount of globally intertwined problems (Peters 2017; Turnbull and Hoppe 2019; Collier and Mahon Jr 1993) and, as if that was not enough, little chance to solve or govern[1] those problems for good. The former is particularly timely these days, regarding various policy areas. In February 2021, a massive ice block, bigger than New York City, broke off the Antarctic, laying literally a crack open in how our global society has been tackling environmental protection and its consequences, despite 1972's *Limits to Growth* (Meadows, Randers, and Meadows 1972). The migration dilemma, triggered fundamentally by the 2011 Arab Spring, has since become domesticated geopolitically, with lives being traded in by political parties for the sake of remaining in power; Merkel's *'We can do this'* (Zehfuss 2020; Livingstone 2016) could have lent itself as an alternative, yet turned out to become an exceptional policy response eventually confirming the rule. In parallel, states globally are seeking to identify solutions as to how society can better co-exist with new and emerging technologies more broadly, as they are challenging democracy, privacy and other established notions that pertain to the 'how we used to live'. Scientists warn of (semi-)permanent disempowerment of society globally from upcoming Artificial Intelligence (AI) systems: Latest large language models are tapping into and likely *"eating up"* the *"operating system of human culture",* thereby posing a myriad of open questions to humankind; one of them being how new technology forms benefits rather than decomposes society and its foundations.[2]

[1] At its core, policy - as much as technology - are matters of governance and are or lead to ideas of the society of tomorrow. Governance is *the act or process* of *governing* or *overseeing the direction of something* (Merriam-Webster). All acts of decision-making - be it on products or public policies - "govern". Policy formalizes how decisions are made or processes are implemented. Policy is hence a form of governance; it makes governance concrete.

[2] https://www.nytimes.com/2023/03/24/opinion/yuval-harari-ai-chatgpt.html, last access 8 August 2023 (Harari, Harris, and Raskin 2023)

The above is what today's reality looks like *on a daily basis* for decision-makers in international policy, in the public and private sector alike (thus in governance), while citizens, industry, media, and opposition parties expect governments in power to promptly and readily define clear-cut answers - *policies* - to all of the aforementioned issues (Floridi 2016).

Yet, are those problems constituting the real dilemma or, rather, how we, *as a collective*, are responding to them? How do governmental institutions or bodies make sense of such issues? How do we define who is responsible for tackling them? Does everything in society first need to become 'an issue' or 'a problem' or a 'gap', before we are willing to solve anything (if at all)? Should governments alone be the ones in charge to provide answers? In fact, *how* we make decisions and *govern the world* - and thus approach policy as an ordering mechanism and prioritizing of problems and solutions - has become a center stage question since the 1960s, that paved the way for growing interrelation and globalization. Back then, the public sector was made responsible to 'administer' society, whereas the private sector was tasked to 'innovate' it (New Public Management). What it seems has been forgotten throughout the past decades is that policy is, fundamentally, also about *creating ideas for and about the society of tomorrow* (Stone 2002). At the same time, policy is often discussed as if it exclusively pertains to the public sector. Under its strategic angle, namely reflecting on what society should look like tomorrow, it becomes clear that policy is not a question that can be solely assigned *to the* public sector or administration - as much as technology cannot be assigned to purely the private industry, for instance.

Calls to set such ideas for society or visions for policy have recently started to become more widespread, driven by the grand challenges and wicked problems the globe faces[3], and related failure to address the former sufficiently: Demos Helsinki and NESTA ex-CEO Geoff Mulgan (2020) argue that we are facing an 'imaginary crisis', lacking capacity to envisage what positive alternatives for policy areas can look like[4]. Mazzucato speaks about 'mission-oriented innovation', or even a 'mission economy', realizing *"direction-setting policies"* that are *"not just about throwing funds at problems but doing so in specific ways";* this in turn would allow for a more *"proactive approach to policy"* that would make policy organizations

[3] Wicked problems are a "*class of social system problems which are ill-formulated, where the information is confusing, where there are many clients and decision makers with conflicting values, and where the ramifications in the whole system are thoroughly confusing.*" *The phrase wicked problems is borrowed from philosophy and used by Rittel to address the kind of problems addressed by designers, first presented by C. West Churchman,* "*Wicked Problems,*" *Management Science, (December 1967), vol. 4, no. 14, B-141-42* (Crowley and Head 2017).

[4] The Imaginary Crisis (and how we might quicken social and public imagination) (Mulgan 2020)

more directly accountable for *creating* and being transformative throughout a whole value chain (Mazzucato 2018, 803). More recently even, Commission President Ursula von der Leyen (2021) launched the *New European Bauhaus*, an initiative aimed at designing new ways of living to meet the objectives of the European Green Deal, stating: *"It is about **how** [own emphasis] we want to live together [...]",* making a reference to the post-pandemic world in which we would finally also *"respect the planet and protect our environmen*t."[5] And in numerous global AI governance proposals, for which policy is just in the making, we can read about the vision for AI to be (more) *'trustworthy'*[6], *'human-centric'*[7], or *'explainable, transparent, and fair'*[8], or *'responsible'*[9], *'maximizing benefits'* and impact for society while *'avoiding all potential risks'*[10].

The above would set a new tone: Policy should focus on a particular kind of (significantly big) goal which (a) (policy) organization(s) should prioritize to achieve, and then commit to realize; thus a particular kind and well-chosen value that should be realized for the public. With the latter implying that 'the public', i.e. the policy recipients or "policy users", be at the core of each policy decision to be made and to create value for, the policy sector, notably at international governance level as is shown in this thesis, has turned to new mechanisms and procedures that set out to enable a closing of the gap between the policy recipients and itself. In particular and given its core function of bringing the perspectives of the users into the making, policy is borrowing from the design space, adopting approaches like design thinking, design research, service design, or policy prototyping or even developing a dedicated discipline of design such as 'design for policy'.

1.2. Aim

[5] Von der Leyen`s green Bauhaus dream (Posaner 2020)
[6] White Paper on Artificial Intelligence: A European approach to excellence and trust (EU Commission 2020)
[7] Non-paper - Innovative and trustworthy AI: two sides of the same coin - Publication - The Netherlands at International Organisations (Zaken 2020)
[8] Singapore's Approach to AI Governance (PDPC 2020)
[9] Responsible AI at Facebook (Harris 2021)
[10] Centre for the 4th Industrial Revolution ("Centre for the Fourth Industrial Revolution (C4IR)" n.d.), last accessed 31 August 2023

As regards policymaking by design, little knowledge exists as to how international policy-making settings work with design and how design practice in that context adds to policy-making at an international and thus global governance level. This PhD research presents three case studies undertaken at prominent institutions from the latter sphere, covering a traditional public sector (EU Policy Lab at the EU Commission), a hybrid public-private (World Economic Forum and its Centre for the 4th Industrial Revolution, San Francisco) and a private sector design-led initiative in technology policy and product governance (by a globally leading technology corporate, anonymized).

This thesis also explores design's potential to contribute to current and future debates about a human-centered approach to policymaking. In an era in which, e.g., we try to identify what the governance of AI with relation to new and emerging technologies looks like, in which society questions the legitimacy of institutions, and in which the general pulse seems to be about a lack of trust into literally anything - be it a technology, a vaccine, a government - it is indispensable to go back to the roots and ask ourselves *who* we are making public policy for, *why*, and particularly *how*, based on whose inputs, with the central question being: What does public policy need and what does policy need to look like to be creating value for those it sets out to serve in the first place.

As opposed to analyzing *"the value of design for policy"* (Bason p. 259), this thesis is interested in the *value from design in policy.* The research approach goes beyond trying to fit design into some stage of the policy-making model. The former confines design to a mechanism integrated in a policy-making model as is. It thereby witnesses design as a tool or operational or procedural ameliorator, rather than seeing in design the chance to augment and enhance policy practice in its core service delivery function (Figure 1).

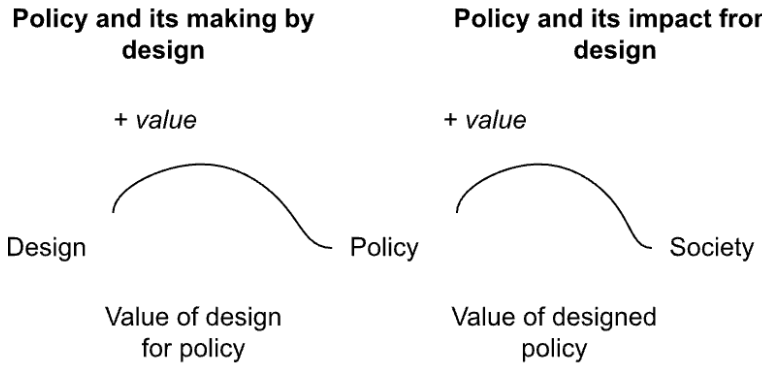


Figure 1: Enhancing design in policy – The stage of value creation

In addition to the above, notions of design such as co-creation, co-design, participatory engagement or (co-)experimentation are often treated as synonymous in not just policy but also business and innovation practice. Their understanding remains in the making and highly context specific as the myriad disciplines or job profiles, into which today's design practices mutate, indicate: 'design for policy' or 'policy design', 'service design', 'social design', 'strategy design'. This disciplinary fragmentation of design - or the notion of the latter - seems to be in line with what scholars diagnosed, namely that design adopts concrete ways of working according to the service profession (e.g., industrial design, textile design, system design, urban design, design management, etc.) (DiSalvo 2012). 'Design for policy' establishes a degree of heterogeneity that has yet not been thoroughly investigated. Part of my analysis will be to investigate what is meant and practiced by design in the policy space, notably in the international governance context.

1.3. Policy as creating value

The underlying research proposes to go away from the purely operational and methodological focus that design practice and research in policy is often limited to: The overwhelming majority of the quests on the role of design in policy to date are tied to the policy making cycle, reflecting how design can be made to fit as a tool and as a part of the

existing cycle (Bason 2016; Coletti 2013; Junginger 2016; Villa Alvarez, Auricchio, and Mortati 2020; Vaz-Canosa and Prendeville 2019). There remains little understanding about how policy processes through design can better contribute to creating value from policy-making or help develop or adopt fresh perspectives altogether: Be it through a cycle-based or linear policy model, little knowledge is available on how design helps make choices as to who policy should be made for, what impact it creates, and how those considerations play a role in policy-making by design today.

Another specialty about this design practice based investigation is that it advances the inquiry of design in the policy realm as a need- rather than necessarily a problem-based view: Policy in the international realm is said to be a *"strategy for resolving societal problems"* (Knill and Tosun 2008). Design is a process that aims to devise courses of action with a particular purpose in mind that is grounded in a *need* (Eames 1972; Simon 1969). The purpose can but need not be a solutionist one and thus limited to solving a problem. Policy, through design, can emphasize a vision-driven or imaginary approach about an ideal course for society and its needs. Such a stance, injected through design, emphasizes that needs, desires, or subject-driven (or subject-bound) values can be at the origin of policy creation rather than limiting policy to problem-solving.

Thirdly, with not even a handful of exceptions (Vaz-Canosa and Prendeville 2019; Amatullo 2015), comparatively little research on design practice happened through case studies or in-depth involvement in design-led approaches in *international* policy-making contexts. The quasi-totality of design in policy studies are tied to user engagement and actor integration and its consequences for the policy-making process, specifically based on local communities, municipal or city levels or, in rarer cases, national contexts (e.g. Amatullo and Herscovitch 2012; Bailey and Lloyd 2016; Boyko and Cooper 2014; Forrester and Body 2014). This thesis inquiry elevates design to the by definition more strategic domains, as they are naturally present in higher governance levels, notably the global policy-making settings.

1.4. Research question and objectives

The research question asked is:

What value does design bring to support the identification and creation of public value in the context of international policy?

Three research objectives help approach answers to my main research question. The objectives are both literature-based and empirical:

Literature and theory-based

Objective 1: Understand the state-of-the-art knowledge and the relevance of design in creating public value in the international policy context

Empirical and case-based

Objective 2: Investigate the design practice in the international policy-making context to understand its relevance

Objective 3: Conduct a participatory design project in international policy to reveal its contribution to public value generation

I adopt a comprehensive approach to my empirical inquiry through the defined objectives: Scholars emphasize that, to create knowledge about design, one should look into the ACTORS (the designer, design team or organization), but also the OBJECT, i.e. the problem, and the CONTEXT (incl. its impact on the design activity) in which the design takes place (Dorst 2008). Cross (1999) proposes to investigate the PEOPLE (i.e. actors), but also the PROCESS and the PRODUCT of design. My approach brings inquiry into these five blocks - design *context*, design *problem* or motivation to design, the *people* or actors who design, the design *practice*, or design *process* itself, and the design *product* together; it lets the blocks build upon each other. The blocks guide my inquiry and design projects (see chapter 3 Methodology).

1.5. Thesis structure

This doctoral thesis is divided into six parts, i.e. chapters:

Chapter 1 introduces the increasing importance of value creation in public policy, emphasizing the shift from mere administration to managing desirability and addressing needs. It highlights the integration of design elements like service design and human-centered design in policymaking, especially at the international level. The research question focuses on how design supports value creation in international policymaking.

Chapter 2 contains the literature review, examining three streams:

I. Public policy, its value, and innovation: This section defines public value, discussing the Public Value Management (PVM) triangle and its evolution. It explores how value arises from the relationship between subject and object, particularly in global governance.

II. Design, its practice, and thinking: This section synthesizes design practice and its relevance to policy innovation. It covers how design addresses needs, solves complex problems, and fosters participation and co-creation, crucial for public value creation.

III. Design in policy: This section reviews 'design for policy,' motivations for using design in policymaking, application contexts, methods, tools, and limitations.

Chapter 3 outlines the methodology, including interviews, documents, and surveys. It describes the multi-sited case study approach involving three international governance initiatives: the EU Commission’s EU Policy Lab, the World Economic Forum’s Centre for the 4th Industrial Revolution, and an anonymized private tech company's global program. The evolutionary case design helps understand the international governance context, policy problem, design process, and stakeholder interactions, ultimately focusing on the value created from design practice.

Chapter 4 presents the findings, detailing how design helps identify and create public value in international policymaking. The findings from the preliminary cases highlight design's role in filling knowledge gaps and endowing legitimacy to address policy gaps. The main case reveals no single practice of design in international policymaking, leading to the deduction of

six design principles. Overall, design surfaces otherwise unaddressed viewpoints in policy decisions.

Chapter 5 discusses the key findings, exploring design practice in policymaking, how design supports value creation, and broader implications. Design regenerates the understanding of the policy space, suggesting inclusivity and diversity of voices. It also highlights issues of integrity, transparency, and accountability.

Chapter 6 recaps the research, its contributions, and limitations. It summarizes the motivation, aims, key findings, and contributions to design and policy research and practice. It also recommends future research pathways and acknowledges potential limitations.

2. Literature review

This literature review covers *objective 1*: Understand the state-of-the-art knowledge and the relevance of design in creating public value from policy-making in the international governance context (see subsection 1.4 for an overview of the research objectives; or move to 3, methodology, for details on the research design and methods used). The literature review is divided into three main sections: It starts with a review of policy and governance literature, as they relate to public value creation and innovation (sections 2.1 – 2.3). Design has been treated primarily as an innovation tool in policymaking, hence the focus on policy innovation. The distinguishing factor in the literature analysis is the philosophical stance adopted in section 2.1.2 'The human factor': It breaks down value creation to the micro-level and links it to user-centeredness, i.e. the individual (called the 'subject'). Subsequently, design insights are presented, notably design as a practice (2.4) and design in policy (2.5), to clarify what design is or means both generally and in state-of-the art policy literature. This section also delineates the meaning of design in the context of international policymaking and governance. Finally, section 2.6 presents the gap of knowledge identified from reviewing these main strands of literature (value creation in (public) policymaking and governance as well as design and design in policy, embedded in the philosophical stance).

2.1. Public policy and governance: public value and innovation

This section, with subsection 2.1.1, sets out to introduce the concept of public value (PV) and its understanding in the context of policymaking. Subsection 2.1.2 embeds the definition of PV into a wider understanding of value and value creation from a philosophical, moral-ethical standpoint. This serves to explore in more detail the role individuals and society have played when value was developed for them through policymaking.

2.1.1. Defining public value

The question of public value is becoming a key concern around today's policymaking in times of grand challenges and wicked problems[11]: Mazzucato opens one of her most recent and seminal papers on innovation policy with the words "*Innovation has not only a rate **but also a direction** [researcher's own emphasis]"* (2018, 803). In this paper she speaks about 'mission-oriented innovation', being *"direction-setting policies"* that are *"not just about throwing funds at problems but doing so in specific ways"*. Policy organizations would choose carefully to fund *for* a *"public objective"* rather than fixing market failure. Instead, mission-oriented innovation allows for a more *"proactive approach to policy"* that would make policy organizations more directly accountable for *creating*, thus being transformative throughout a whole value chain. While the intention of this thesis is not to explore market rational, innovation policy, or the public good in the economic sense[12], mission-oriented innovation, i.e., flying the man to the moon or tackling climate change, seem to highlight one key element: *focus*; focus around **a particular kind of (significantly big) goal a policy organization**

[11] Wicked problems are a "*class of social system problems which are ill-formulated, where the information is confusing, where there are many clients and decision makers with conflicting values, and where the ramifications in the whole system are thoroughly confusing.*" *The phrase wicked problems is borrowed from philosophy and used by Rittel to address the kind of problems addressed by designers, first presented by C. West Churchman,* "*Wicked Problems,*" *Management Science, (December 1967), vol. 4, no. 14, B-141-42*

[12] Later public value analysts juxtapose market efficiency with public value rationale: "[T]hinking in terms of public failure (and public success) conduces to a public-value view. Thinking in terms of market failure and government intervention conduces to an efficiency view. Efficiency is a vital consideration, but there is no reason for it to dominate policy deliberations simply by force of available analytical tools. In Bator's (1958, 379) words, "sometimes efficient markets may not do.""(Bozeman, 2002, p. 157)

should prioritize to achieve, and then commit to realize, thus a particular kind and well-chosen value that should be realized for the public.

There are a myriad of ways of looking at the concept of value generation. They range from more "sober" rational, utilitarian interpretations (economic and opportunity cost logics) to the more "idealistic" ones, putting value creation or the human element - i.e. "*what value* and *for whom*" - into the foreground. Yet others highlight the commodification behind the provision of (a) public service or deem generating active engagement as "valuable", thus emphasizing the *means* of value generation. Kelly, Mulgan, and Muers (2002), for instance, refer to PV as *"value created by government through services, laws, regulation and other actions."* (4) whereby they make clear that, in a democracy, value remains defined by the public themselves. Building upon Moore (1995), they explain that value is determined by citizens' preferences, *"expressed through a variety of means and refracted through the decisions of elected politicians"*, estimating citizen value to fall into *"three categories: outcomes, services and trust"* (4). Most importantly, they recognize that values are nothing static yet a fully dynamic concept: On the one hand, values are subject to constant changes *"as a result of public experience and debate"* (5). On the other, they judge it is the government response on *"how best to maximise value"* (5) that is subject to change, given the learning and insights from answering to public value inquiries. What is key in Kelly, Mulgan, and Muers' approach to public value, next to or perhaps even underscoring its dynamic, bi-generational nature (they propose the public value framework in a discussion paper to support public sector reform) is that they emphasize that public value relies upon engagement opportunities with the public: *"A long tradition of political thought reaching back to Plato [...] maintains that citizen engagement in public affairs is desirable precisely because it challenges and changes underlying preferences."* (6). PV is thus, in a way, the outcome of both societal deliberation and public sector interpretation of the latter as much as the latter's response to societal deliberation; PV is hence fully reciprocal and interdependent between citizens and public policy managers and/or decision-makers, as much as it relies on opportunities to engage in the first place.

Kelly, Mulgan, and Muers (2002) weave a substantial set of traditional management and (utilitarian) economic concepts into their PV stance, notably by putting measurement and performance metrics of value to the foreground: *"The concept of public value provides a rough yardstick against which to gauge the performance of policies and public institutions, make decisions about allocating resources and select appropriate systems of delivery."* (4).

Thereby, the authors highlight returns on investment and real value-adds: *"The value added by the government is the difference between these benefits and the resources and powers which citizens decide to give to their government."* (4); they also establish the concept of opportunity cost as a core concept to PV:

"The idea of opportunity cost is therefore central to public value: if it is claimed that citizens would like government to produce something, but they are not willing to give anything up in return, then it is doubtful that the activity in question will genuinely create value. [...] For something to be of value it is not enough for citizens to say that it is desirable. It is only of value if citizens – either individually or collectively – are willing to give something up in return for it." (4)

The paper by Kelly, Mulgan, and Muers (2002) was written as a discussion paper, addressed to a UK Minister of State, around the 2000s (This is just after the New Public Management decades and a shift to the Public Value era.). Back then, the opportunity cost narrative was perhaps a required one to highlight in order to be heard with reform proposals tied to a value narrative. It is doubtful whether such argumentations are equally valid today, over two decades after, and in an era that has built greater awareness for user- and society-centricity in policy (see both section 2.3, theory review, or 5.1.4, design practice description).

More recently, scholars assessed that *"Public value's promise is not to supersede economic perspectives but to combine objective* ***and*** *subjective performance factors into a coherent framework."* (Meynhardt 2015, 147). Meynhardt reminds us: *"Public value is value from and for the public"* (148) and specifies that PV *"may be seen as a way to contextualize financial and non-financial performance* ***within a larger picture of human values established in the public sphere and in society at large."*** (147, own emphasis). Even earlier than that Jackson (2001) assesses:

"The age-old question of markets versus hierarchy is too simplistic. Instead, the search is for optimal complex network relationships that are based upon co-operation and participation rather than competition and control. Within these networks the public sector, it is argued, has a new role of acting as a broker in the creation of value." (2001, 5)

The public value idea hence counterbalances overly simplistic views on human nature that use rational or public choice ideas of economic maximization of utility or service (O'Flynn 2007).

To tie the above together we can safely say: First of all, citizen preferences are one - and perhaps a first - condition to establishing public value. Willingness to pay or invest into a particular public service or outcome over another is the second part upon which PV is conditional. Thirdly, for as much citizen preferences (as per their economic interpretation) might be a necessary condition, they are no longer seen as sufficient to reach an accord about PV and to ensure it (such PV) be acted upon. Instead, citizen preferences need to be brought into the perspectives of relation and coordination, so they reflect a larger picture, namely one that goes beyond utilitarianism and towards co-creation ("co-operation and participation"). Such a co-creative picture - thus collectively owned preference with collective willingness to invest in - may then reflect the path of an entire public and society.

Meynhardt (2009), with his philosophical stance on PV and the PV triangle (see section 2.1.2), provides more nuance behind what society-centricity means - or what it means to be "a policy's client", so to say. He provides more shades behind the meaning of value for "the (an) identity citizen": *"[T]he term "public value" attracts projections concerning a need to engage in dialogue about values, value conflict, and the role of the public sector in changing societal contexts."* (Meynhardt 2009, 192). To enhance the preceding customer preference and willingness to pay (choose one option over another) debate we can look into philosophy: Spinoza (1632-1677)[13] describes *desire* as *the human essence* that lays the cornerstones *for perseverance and human evolution*: *"The human being is a being of desire, not only of needs, and the power of the desire to mobilize positive change of behavior.*" (Lenoir 2013, 77). Hence, and as above-mentioned scholars detail, it is the public managers' responsibility to *"undertake the search for public value conscientiously"* (Moore 1995, 299) - or what private-sector counterparts might call defining 'value-propositions' – proposals about what is valuable (Alford 2008), grounded and based in individual's feedback of what's desirable.

Scholars illustrate the focus on desirability and inherently steering and guiding, value-seeking nature of 'designing for value' on a concrete example, namely one of town halls. During the

[13] Spinoza is a Dutch-Portuguese philosopher. Realizing modern conceptions of the self and the universe, he came to be considered one of the great rationalists of 17th-century philosophy.

60s, the town halls' purpose was to be hosting administrative tasks. Over time, however, the town halls were *expected* to create value by being a locus of hosting democratic participation that would provide the opportunity to engage with civic affairs (Kelly, Mulgan, and Muers 2002, 29). In this context, Kelly, Mulgan, and Muers do not just refer to policy managers yet indeed to "leaders" that would want to 'shape public preferences', i.e. create new ones, and 'accommodate' and thus fulfill them (entrepreneurial and value-seeking role). At the same time, *"[p]olitical leaders will want to identify and avoid political/policy icebergs rather than consult people about how they would like to repair the ship of state after it has been hit."* (7). The scholars hence attribute value to the role of taking leadership in the public sector. Moore (1995) calls such leadership a 'value-seeking imagination', which is *"reinvigorating the work of public administration"* and *"animating our deliberations about what is valuable",* concludes Alford (2008, 365). From that we can infer that PV should not just be tied to uncovering citizens' needs - and citizen desirability - to engage with or invest in. It is also composed of active policy leadership or value-seeking, i.e. what creates visions and tests them (continuously) against what is not just needed but might also be *desirable*, that is, in line with the philosophical notion what holds *the power of the desire to mobilize positive change of behavior* or *mobilizes perseverance* by the public.

Apart from inquiry-led steering towards a co-owned understanding of purpose and thus public value, Moore's PV framework requires consideration and integration of both *resource*s - or of those (actors) who can provide resources (let us call it "resource environment") and legitimization or legitimizing capability - those who authorize (finance) or *authorizing* environment - in order to secure the implementation of a policy vision (see section 2.2.1, strategic value triangle, for detailed discussion of the three environments):

"We added to the idea of public value that it was not sufficient for a public manager to have his or her own view of public value; others had to share it. In particular, the group of people in positions that could confer legitimacy and provide financial support to the manager would have to agree with the conception of public value that was to be pursued. Thus the second point on our triangle focused on the idea of gaining "legitimacy and support" from the manager's authorizing environment." (Moore and Khagram 2004, 9)

This means that PV - both its value inquiry and legitimization - do not pop up in a void. They are the consequence of a shared understanding or careful curation of both the value inquiry, thus the how to provide value and for whom, the latter's (financial) realization and the interplay

of public societal, resource-endowing, and political legitimacy-providing (authorizing) realms (task, resource, and authorizing environments). Various parties - thus actors - provide either legitimacy or authority or, potentially, both at the same time, in order to formulate and/or operationalize desirability/ies. PV needs to be inquired into without preconceived notions, but looked at through both the political, policy, private sector and - notably - societal lens.

Finally, PV is a matter of transforming individual into collective value, from which individuals draw again value from. PV is, inherently, interactional and can be thought of as iteratively formed and experiential:

> *"[Public value] is basically a contingent idea and draws our attention to the mechanism of how people draw value from the collective (public value as a resource for the individual), and how the experience of a collective emerges out of individual and social interactions with organizations in some way (the individual as a source of public value). On a fundamental level, relationships involving the public help people to grow, develop, and become socialized."* (Meynhardt 2015, 147)

Perhaps ultimately and through the path of expressing their human essence - their desire - the individual and the collective understanding of value can become a vehicle for (positive) public change and evolution at scale. The next section will dive deeper into the psychological and philosophical underpinnings of how PV is actually formed or evolves from interactions.

2.1.2. A philosophical, moral-ethical, psychological account: The human element to public value

Albeit providing an account of how public value (PV) can be interpreted, the previous section cannot explain well *how* PV evolves - i.e., the *"in some way",* as Meynhardt says. PV is grounded in society-centricity, multiple actors, and human desire and comes in transformational and dynamic (i.e. non-normative), vision-oriented shape. Understanding the individual and collective interactions behind PV is hence key. Meynhardt (2009) presents a fascinating, extensive logical analysis that is grounded in philosophical (e.g. Epstein, Rousseau, Bentham, Kant), psychological, *and* economic (e.g. Heyde, Lotze, Iwin) perspectives of how value, the public, public value, and public value creation - and most

importantly collective and individual "experience" - are tied together and emerge. He, first of all, assesses that psychological accounts are key to understanding public value creation. He refers back to psychologists Johannes Erich Heyde and A. A. Iwin to derive that **value** itself **is the result of a subject-object (S-O) relationship**. Thereby, **value cannot exist independently of such a S-O relationship**. On the contrary, **value is defined as the 'essence or quality' of the relationship in which the subject relates to the object.** That is, an object relates to a subject by (e-)valuation, and through the latter, value comes into being as an abstract entity of desirability or preference.

Through his psychological and philosophical entry point, Meynhardt derives in technical and generalizable detail how value arises and who, what, and where it originates from, which carries vital implications for design-led policy. He denotes that value is *"value for a subject"* and that *"[e]very value can [...] be traced back to some use value, with a process of valuation as its precondition."* (198) Value, thus, is subject-bound, but not restricted to a specific subject. This view signifies further that absolute or objective values can exist, in terms of a value being independent from a concrete subject: For policy analysis one can imply that, if different individuals share similar (e-)valuations (i.e., arrive at similar narratives or meaning-making), a value becomes "objective." This objectivity is however still bound to subjects and therefore "vulnerable" to change and continuous revision in discursive practices of the subjects, thus externalization of the given (e-)valuations. Meynhardt reminds us that the quest for value is always left with incomplete answers or, on a more positive note, is only temporary objective truths, given they underlie changing relations. Value generation, based on philosophical and psychological ground truth and carrying assumptions of human nature, remains *"relative"* (200) - or, as this thesis will say, fundamentally "relational" (subject-object or subject-subject).

Meynhardt suggests that human nature provides the minimal starting point for the development of value, the 'basis of evaluation' (see 202), which excludes a normative approach to value generation. The latter can be thought of attaching emotional-motivational aspects, speaking of underlying 'forces' like *emotions*, *attitudes*, or *ideals.* "Value" hence means asking people for their emotional-motivational evaluation (positive or negative reaction) concerning a certain object (real or ideational). A "value" then would be an experience based on evaluation of any object against basic needs (Epstein 2016, 16). Thinking this further for the public sector, Meynhardt (2009) calls for a non-normative approach to PV creation; meaning that a human-rooted approach to value creation need be

non-normative (no preconceived notions of what is evaluated as valuable; rooted in emotions, attitudes, ideals):

"Public value would be an empty, formal construct, if one did not reflect on what people need and wish for. This is not to prescribe what would be desirable. But managerial action requires a basic idea of what to strive for: one cannot purposefully create public value without explicit reference to human nature." (*201)*

Secondly, non-normative value inquiry also means that the societal (public) context needs to be considered *along the individual-collective axis* ("experience"), i.e. the subject-object relation that creates the public sphere (the experience that arises out of the collective *in some way*). Capturing the basis of evaluation - and needs - is thus center stage to draw conclusion upon what a valuable public experience in society means:

"It is about the values held about the relationship between an individual and a social entity (constructs like group, community, state, nation) that characterize the quality of this relationship. [...] Public value then would be the extent to which a perceived relationship between an individual (or group) and some social entity influences the fulfillment or change of basic needs." (207)

Thirdly, based on philosophical analyses, generating PV is significantly more nuanced than referring to services, outcomes, or trust-building (the experience *that arises out of the collective* in some way): *"Following the philosophical assumptions made, any value defining the qualities of relationships between the individual and the public (diversity, social integration, pluralism, but also greed or egoism, etc.) and ultimately impacting on how individuals or groups fulfill their basic needs shall be regarded as "public value."* (206). Public value is not just generated through or by the government, or directed, but simultaneously organic: *"PV is also value "drawn" from the public, i.e., from the experience of the public."* (ibid).

Finally, Meynhardt argues that value stems from legitimizing action without a homogeneous approach. He borrows from the private sector: To legitimize action there is not just a single one-fits-all-solution or *"business case"* (208). He proposes there is a 'case' to be made that underlies *utilitarian-instrumental*, *moral-ethical*, *political-social* or *hedonistic-aesthetical* motives. All of the former can constitute value creation (Note that all of them are rooted in the emotional-motivational - thus psychological - basis of evaluation as discussed earlier in this

section.). Such dimensions, as he says himself, are not exhaustive yet 'yardsticks' that help navigate where to look for PV in the subject-object relationships and help substantiate empirical work. See the illustrations copied in here as follows.

Table 1. Relation Between Basic Needs and Basis Value Dimensions

Basic need for ...	Translation into a motivation for ... (Examples)	Basic value dimension
... positive self-evaluation	• ... positive self-concept and self-worth • ... consistent relationship between self and environment • ... feeling of high self-esteem (in social comparison)	moral-ethical
... maximizing pleasure and avoiding pain	• ... positive emotions and avoidance of negative feelings • ... flow-experience • ... experience of self-efficacy due to action	hedonistic-aesthetical
... gaining control and coherence over one's conceptional system	• ... understanding and controlling environment • ... predictability of cause and effect relationships • ... ability to control expectations to cause desired outcomes	utilitarian-instrumental
... positive relationships	• ... relatedness and belongingness • ... attachment, group identity • ... optimal balance between intimacy and distance	political-social

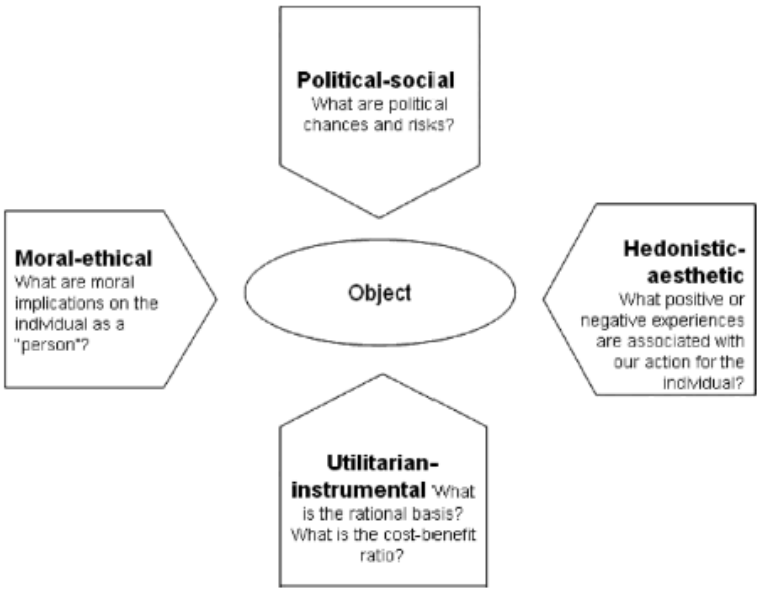


Figure 2. Four inductive evaluation perspectives.

Figure 2: Meynhardt's dimensions of public value creation (Meynhardt 2009, 203, 209)

What is relevant for my analysis is that, when looking at the illustrations and dimensions that Meynhardt formulates (see illustrations copied above), not all of them might have been (equally) considered in the creation of public value so far. Particularly those relating to the individual - "the person" and "the self" and her needs, e.g. self-efficacy experience due to action - may have been overlooked, without a design-led and user-centric stance explicitly adopted by policy. Indeed, Meynhardt observes that the entire realm of hedonistic-aesthetical public values has not been part in Jørgensen and Bozeman's (2007) (see upcoming sections) value universe whereas *"we would need to consider them to capture the "full roundedness" of human nature."*, as he says (208).

2.2. Managing policy towards value: public value triangle

The previous section talks about the importance of the qualities of dynamic leadership, society-centric and value-seeking imagination, and co-creative - i.e. relational - envisioning of the PV concept. *Yet what does it mean to practically manage towards public value?* How can a public manager - or *designing* public manager - know what is valuable to be managed - or

designed - for? Who - what actors - and what conditions (context) enable or curb generation of PV? This section seeks to provide tangible insights into the PV's *task* environment and *resources,* and *authorizing* environments (compare also section 2.1.1 Defining public value), going away from defining the notion of PV as a conceptual idea (portrayed in both the policy and philosophical stance in section 2.1) and instead looking into how PV can become concrete in policymaking, through public value management (PVM) (notably 2.2.2). The most prominent contemporary PVM approaches are discussed, first and foremost the 'strategic value triangle' by Moore (1995). By synthesizing recent adaptations to the latter in public and PV management literature, and pertinent in the context of international governance, a deeper understanding is established of how PV is generated.[14]

2.2.1 The strategic value triangle

As we seek to achieve value-seeking imagination, how do we know what value to focus on, i.e., what public value is composed of - what makes it *desirable, appreciated* - and how to achieve it? The first seminal work conceptualizing such strategic public value *creation* thinking in the policy sector ('public (social) value') and discussed as groundbreaking work by scholars until today (Bryson et al. 2017) can be ascribed to Moore's *Creating public value: strategic management in government* (Moore 1995). Moore developed a *strategic* value management concept and framework for understanding public value creation that significantly contributed to public sector theory and particularly the practice of public management (Bryson, Crosby, and Bloomberg 2015). The symbol of this idea became a visualization called the "strategic triangle" (see Figure 3 below). The purpose of the triangle was to make government managers aware of considering three complex issues before and during committing policy, themselves, and the responsible organizations to *"a particular course of action"* (Moore and Khagram 2004, 1). The logic: First, what was the important "public value" the organization sought to produce? Second, what "sources of legitimacy and support" would be relied upon to authorize the organization to take action and provide the resources necessary to sustain the effort to create that value? Third, what "operational capabilities"[15] (including investments and innovations) would the organization rely upon to realize that value.

[14] Note that the term PV "generation" is used to distinguish the underlying work from work by earlier scholars, notably Moore, but also Meynhardt.

[15] Here it is important to denote that Moore, in his sense-making of public value, distinguishes between what he calls 'amenities', e.g., clean streets, or 'necessities', e.g. public healthcare: Production and

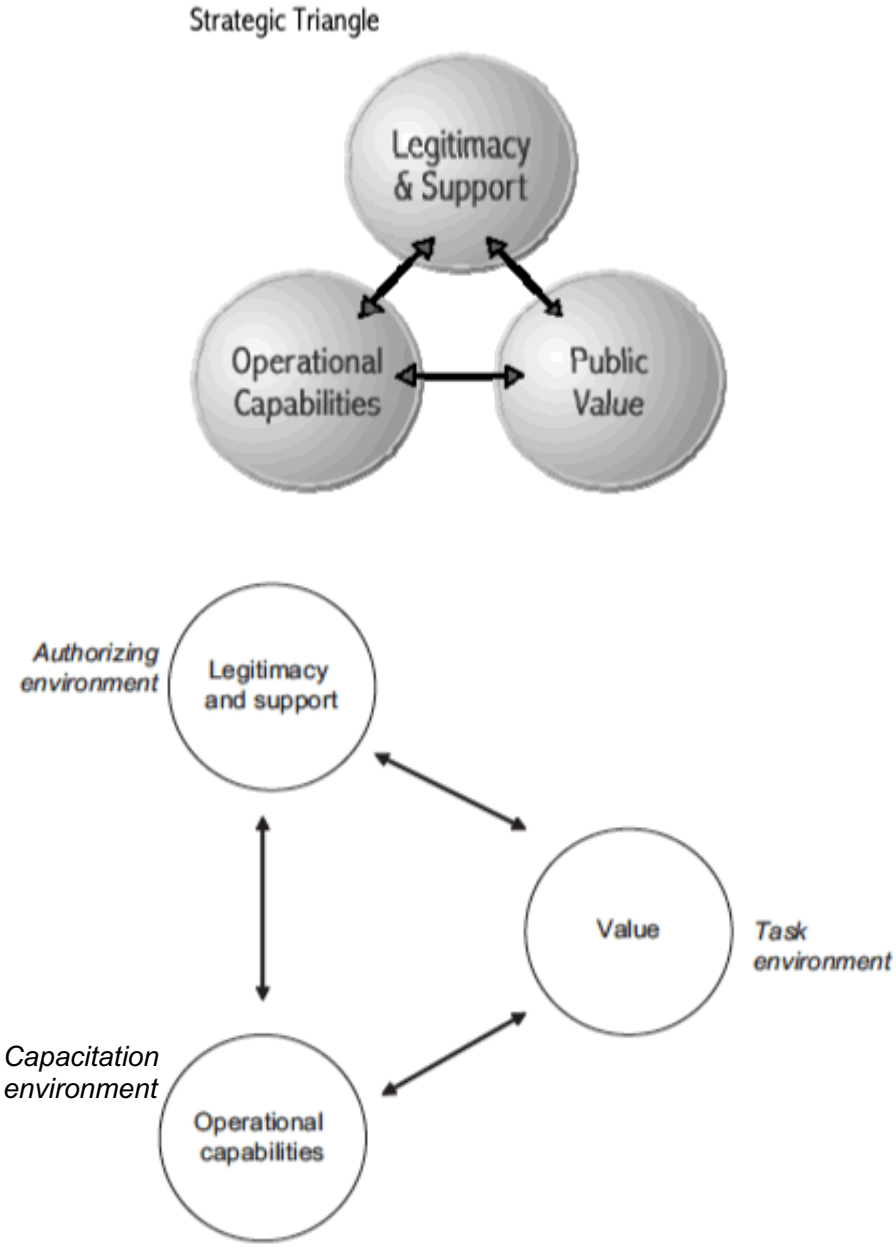


Figure 3: Public value triangle illustrations, original and enhanced by "resource environment" (Moore 1995; Moore and Khagram 2004, 3; Alford and O'Flynn 2009, 173)

distribution of amenities can be *"comfortably left to the markets"* (unless major technical issues hinder the latter) and thus focused and acted upon by business; necessities can be claimed as 'primary goods' and *"common aspirations"*, where production and distribution are important to society as such and can be left to governments (1995, 44–45).

Moore seems to underline a major challenge in public value creation or perhaps even inherent constraint (and thus enabler) when a policy manager turns public value into action: namely both readily obtaining support and the capabilities to realize a particular PV vision. *"The strategic problem for public managers thus came to be: imagine and articulate a vision of public value that can command legitimacy and support, and is operationally doable in the domain for which you have responsibility."* (Moore and Khagram 2004, 9). Moore explains how to resolve this strategic problem by urging that a public manager will have to, first, perform a thorough analysis of value and how it can be achieved; second, factor in actively the struggle to obtain both resources and authority to realize the former; and third, understand what type of competence will come from outside or inside the policy organization. That latter part is of particular interest given that for the policy intent itself to be effective, it is reliant upon entities and organizations - or actors at international governance level - to take part in the authorization *and*/*or* operationalization to absorb it, i.e., to determine urgency or relevance and translate it into practice[16].

Collaboration and working across multiple organizational boundaries is a bottleneck in managing policy to hold and cater to - and thus design for - public value: **This is given that the public sector cannot rely on making policy practically effective - thus operationalize it to be impactful - without capabilities that lie outside of its own sphere** and the capacity to *absorb* policy provisions in the first place (as much as the public sector cannot create value without vast legitimacy and authority, thus the political and authorizing sphere). Moore does not specify in detail how to detect the capacity that is required, or where outside the organization one (the policy manager) would find that capacitation. He however mentions that it is, to a large extent, to be found outside the policy realm: *"... in the public sector, much of the capacity that a manager needed to produce public value lay outside the scope of the organization he could control directly …"* (Moore and Khagram 2004, 9). Similarly, when it comes to the triangle's 'legitimacy/authority' dimensions, scholars argue: *"Public managers need to rely on interpersonal and interorganizational processes as complements to—and sometimes as substitutes for—authority."* (Kettl 2015, 164). This confirms, firstly, that multiple actors need to co-work together for policy to be valuable and, secondly, that policy's character is networked and relational *across* legitimacy, capability, and value creation. **Public**

[16] E.g,. a trade policy is turned into effect by institutions as far away as a customs authority or event parcel service; an AI policy is drafted in order to be implemented in particular by (tech) companies deploying AI, or a Covid 19 policy - from travel bans to curfews or access to tests or vaccines - are executed by a myriad of institutions, from police, to restaurants or cafes and bars, pharmacies and cabinets to the citizens themselves.

value creation overall is hence fundamentally relational (see section 2.1 in which I have established the individual-collective (S-O) axis, collective experience and thus relational character of PV.)

About a decade after Moore, Mazzucato's mission-oriented approach to policy details that the decision about what `mission` to focus on - hence what value to create - needed to be itself a collaborative one. She postulates that *"achieving public value cannot be the work only of the public sector"* and that *"hence opening up this process to include a wider set of stakeholders—involved in the definition of missions as well as the serendipitous process of how to achieve them—will be an exciting new area of analysis linked to 21st-century innovation policy targeting grand challenges [...]"* (Mazzucato 2018, 809). Mazzucato's work deals with innovation policy and this thesis with a less explored policy innovation (and evolution) or design-led policy angle. This work brings together Moore's key work on enabling factors to PV creation, and thus "functional" concerns to PV creation, like capability and legitimacy, with the one Mazzucato proposes: Recognizing that the decision about what kind of PV - or mission to follow - needs to be, first, a collaborative one and, second, one to which not just the public sector commits or pledges capabilities and authority. Instead, PV generation is a journey of an assemblage of actors who invest assets and resources in and feel responsible for the public outcome, meaning those actors self-legitimize and -authorize with their respective realm and role whilst generating PV. In fact, Meynhardt has only recently published a piece that understands the PV of an organization as its contribution to the common good and defines it on the basis of basic human needs (Meynhardt and Frantz 2021).

In the context of such (new) networked governance on wicked problems, Stoker is one of the scholars who specifically assesses PVM as a new paradigm[17]. He defines networked governance as *"a particular framing of collective decision that is characterized by a trend for a wider range of participants to be seen as legitimate members of the decision-making process in the context of considerable uncertainty and complexity."* (Stoker 2006, 41). Stoker highlights that PVM, as part of networked governance, needs to go beyond managing through networks and instead propagate to be open to learning in different ways and making use of a wide array of resources. Scholars acknowledge Stoker's work as recognizing that,

[17] Stoker ascribes to PVM the potential of reform in public management.

in the context of networked governance, 'public value management'[18] is more suited than conventional public administration or management: *"new forms of governance have called forth a new public management paradigm and public value management is perceived as the appropriate response"* (Davis and West 2009, 605). Stoker indeed argues that networked governance, thus one in which multiple actors naturally converge and meet - as is the case in the context of this study in international governance - requires *"a vision of an alternative paradigm"* or *"overarching framework"* (Stoker 2006, 41). He sees in PVM practices where politics and management - thus *"legitimate democracy"* and *"effective management"* - go hand in hand: *"One must involve many stakeholders to make good decisions and to get a grip on delivery and implementation."* (Stoker 2006, 56).

While the above scholars' work - from Moore to Stoker - make the key points explicit as to *why* PV management can be key in addressing wicked problems, enhancing public service delivery, or achieving value through collaborative approaches in networked, interrelated worlds - thus the *why* and the *how* - there is little explicit reference as to the *what* and the *who* - thus knowledge or actors, i.e, what comes to be defined as valuable, or as the next new mission, key values, or new priorities to achieve. It remains also unresolved who exactly decides about or contributes to the former. Stoker concludes he sees the strength in PVM as a networked governance approach in redefining *"how to"* meet challenges. He says that given PVM foments the ability to act based on a spirit of motivation rather than rules or incentives, given that people - the given actors - are involved through partnerships. Note that Moore's concept itself does not seem to help the public manager know *what* she should focus on, i.e., what public values to make sense of and their prioritization. Stoker also makes an approximation of - or at least indirect referral to - the "who" or whom to involve: He says that PVM as networked governance approach "*rests on* ***a fuller and rounder vision of humanity*** *than does either traditional public administration or new public management."* (Stoker 2006, 56). He again refers to what he calls *'stakeholder democracy and management'* where people in the networked governance approach are "*motivated by their involvement in networks and partnerships, that is, their relationships with others formed in the context of mutual respect and shared learning."* (Stoker 2006, 56). It seems thus to remain fundamentally unresolved how value from policy is something that is objectively defined, or whether it is inherent to those who talk about it or are granted access to being involved in defining value in a public value oriented process.

[18] The term public value management is not directly derived from Moore's yet rather from Stoker's work claiming that the achievement of public value is the core objective of public value management (Stoker 2006).

In deliberative democracy approaches, such as PVM, the public interest or the broadly (objectively) considered-as-valuable is established as individual and public preferences (resulting from public deliberation or deliberative reflection) or individual and public preferences produced through a complex process of interaction (Kelly, Mulgan, and Muers 2002; Stoker 2006, 44). Interestingly, Moore suggested, with his triangle approach, that the policy maker's proposal of value creation can change according to the sources of legitimacy and capability when vetting it. Combining the aforementioned, this means that the policy-making focus, i.e., missions, values, purposes - or the idea of the society of tomorrow (Stone 2002) - remain approximated and not explicitly defined. They result from partnerships or networks, shaped with those in the position to decide about capability or legitimacy attribution. The objective value defined - what's produced (objectified) by the given partnership or network - is thus a result of the collective of actors.

It results that, at aggregate level, in a society, democratic institutions act as a mediator between voluntary individual choice and collective decision making and the value that results from that latter. *"We should evaluate the efforts of the public sector manager not in the economic marketplace of individual consumers but in the political marketplace of citizens and the collective decision of representative democratic institutions."* (Moore 1995, 31). Moore further states:

> *"The institutions and processes of representative democracy come as close as we now can to creating the conditions under which individuals can voluntarily assemble and decide collectively what they would like to achieve together without sacrificing their individual desires. It is the only way we know how to create a "we" from a collection of free individuals."*[19] (Moore 1995, 30)

This means that individual value might not be corresponding to the vetted collective one that is produced at aggregate level. It is important to consider the evolution of the state in this context, e.g., *"independent voluntary organisations offer social services within a complex ecosystem of provision. It is difficult to disentangle public and private after decades in which governments have introduced market-based methods of organising into public*

[19] Resources made available to the public sector *"are made through a process of voluntary choice - namely the process of representative government. To be sure,* individual*, voluntary choice does not control the system."*

administration." (Kimbell and Bailey 2017a, 216). It seems the capitalistic paradigm, having impacted policy heavily in the post-war era, has led society to expect they can have a choice that is based on their individual preferences at all times. Collective concerns are getting bled out and more soberly synthesized: Today, there is an expectation on the policy sector to offer what the private sector does, namely a focus on both heterogeneous and individual(ized) needs. Public value generated hence altogether requires a stronger consideration and factoring-in of the relationship between individual and collective experience, (e-)valuation, and needs framing.

2.2.2 Public value creation from the strategic value triangle

While Moore (1995 and onwards) does not give an overview of *what* value to focus on - e.g. in the form of a list or criteria - or provide one clear-cut definition of what public value *is* (as debated in the previous section) he elaborates, on a case of municipal garbage collection, what might constitute a valuable public service. This lets derive how to best *create* value from a public policy intervention. Several layers that seem to define the creation of PV can be inferred:

(1) Public value is grounded in **the public department's operations** - thus a mandated authority and other than a private sector department: *"the department makes the city's houses, streets, and alleyways cleaner than they otherwise would be."* (1995, 39).

(2) Public value derives from **the consequences of a public service**: i.e., *cleaner than otherwise* streets, or *protection from infectious diseases from garbage collection*

(3) Public value is **grounded in an individual citizen's desire**: Moore equates value from a public service with *"individual citizens' desires"* for that public service

(4) Public value requires that **a sufficiently satisfactory case be made to the given community** - thus a narrative created: The special nature (political and financial) of the public sector requires the value of a public enterprise to be explained in a way that is *"satisfactory to the community as a whole"* (39)

(5) Public value is the **link** between public and/or government **output** and/or **intervention and the desired social outcome**

Public value creation seems thus to be about individuals' as community members' desires, finding ownership, collectively, in stories that aim at the realization of at least one desired particular societal goal (or outcome) realized through the realm of a mandated public enterprise or policy intervention: *"Authorizations are usually justified by an account - or a story - of the value of the public enterprise."* (Moore 1995, 39). Moore sets forth in depth that the political system "authorizes" the public manager in practice to address a policy enterprise or intervention in the name of the public, or collective:

"The central intellectual problem in defining the value of governmental activities" lies with *"[t]he necessity of giving a general, politically acceptable answer - of acting as though there were a collective consumer with well-defined preferences for social conditions brought about by public enterprises."* (Moore 1995, 39).

Community or collective use means thereby more than being a client or beneficiary of the public service but an individual as part of the public*:*

"To be useful, the account must appeal not just to individuals in their role as clients and beneficiaries of clean streets, but, in addition, to the community at large - more precisely, to individuals in their role as citizens of a society and to their representatives in political institutions." (Moore 1995, 39-40)

To finalize by linking back to Moore's aforementioned municipal garbage collection example: Cleanliness might not be the best story to tell to appeal to the individual as the community member. As Moore says it, a *"more powerful"* or *"a better story",* such as e.g., protection from infectious diseases (39-40) might be the one to focus on: First of all, the connection between governmental output (i.e. intervention) and *desired social outcome* (40) must be visible or identifiable, and secondly, the account needs to trace back to the individual as citizen, e.g. by caring about *"notions of right", "fairness"* and *"justice"* (41).

Moore's public value concept can be described as imaginative, one that is less about defining yet rather envisioning public value as a policy manager or designing policy officer. A paper

analyzes Moore's public value concept (Alford and O'Flynn 2009) over a decade later from when Moore published his book. The paper attempts to clarify the 'scope' of 'public value itself' (as opposed to the theory of public goods, public interest, or public benefit) by highlighting **three main elements:**

(1) Public values cover a broader range of values than public goods insofar as public goods manifest themselves purely as government interventions under market failure. Public value also provides institutional guarantees such as rule of law, maintenance of order, protection of freedoms and rights - or the aforementioned notions of right, fairness, and justice

(2) Public value is impact- over output focused: *"[P]ublic value encompasses not only outputs but also outcomes, that is, impacts upon those who enjoy the value/good in question or upon states of nature important to those people."* (Alford and O'Flynn 2009, 174)**.**

(3) Finally, public value has *"meaning for those enjoying it"*, thus *"meaning for people"* (174-175): thereby the authors quote a Macquarie Dictionary definition from 1987, namely that value is *"that property of a thing because of which it is esteemed, desirable or useful; worth, merit or importance".*

To synthesize this section: The rhetoric that Moore established around public value and its creation is timely and still valid. It was enriched and confirmed by scholars also two to three decades after. In particular, it referred to the core constituting element of individual-collective axis or interplay, which is what Moore defined in his book as *"the primacy of individual preferences as the arbiter of social value"* and, as a collectively expressed value, *"the combined preferences of citizens for an aggregate social condition"* (1995, 44). The latter was destined to not indicate preservation of interests but the active and dynamic (deliberative and approximating) provision of value instead.

The above-presented also suggests that public managers are required to develop value propositions or *"proposals about what might be valuable"* (Alford and O'Flynn 2009, 178), according to the needs that people - the given collective in a given circumstance - estimate(s) as valuable. - In fact, recent work suggests that *"Public values are the beliefs we hold about what is – and what is not – appropriate action in the public sphere."* (Witesman 2020, 1). - From that it becomes clear that public value is inherently about the idea of the society of

tomorrow, and about *envisioning* future desirable societal outcomes enabled through a public manager and rooted in individuals' sought-after benefits or interests, mediated by political democratic processes of deliberation and vetting (and the mandated public authority/enterprise itself). *"Politics remains the final arbiter of public value just as private consumption decisions remain the final arbiter of private value*." (Moore 1995, 38). Finally, it can be presumed that a public enterprise or policy intervention carries value for those who receive or enjoy them: If it is valuable, it is because it is *perceived* to be valuable.

2.2.3 Adapting the strategic triangle and public value conceptualization

By the first decade of the 21st century, the original PV concept was discussed as two principal, different strands that vary in their purpose and orientation (Davis and West 2009). A *generative perspective* on the one hand, as suggested and as discussed by Moore (1995), Moore and Khagram (2004) and Stoker (2006) (see preceding sections; 'generative' as in being dynamic, deliberative, or evolutionary). And on the other, the *institutional perspective,* following Bozeman (2002), Jørgensen and Bozeman (2007), Jørgensen and Bozeman (2002), and to a lesser extent Kernaghan (2003). Davis and Kent (2009) argue that the strands emerge from the public value literature as 'Two Readings of the Public Value Literature' and that they are "*discernible and partially divergent"* (604). They emphasize the generative approach and Stoker's view of public value as *"the product of the dialogical endeavors of ethical people working both within networks and partnerships and with the wider communities to which they relate."* (Davis and West 2009, 606). They refer to deliberative spaces of making policy with the benefits of opening up decision-making to a broader public. This argument has been made many times in the context of questioning ideal forms of governance, primarily arguing pro deliberative democracy as a response to inadequacies of rational policy-making, notably in contexts of uncertainty and value pluralism (see e.g. Fischer and Forester 1993; Majone 1998; Stone 2002; Schön and Rein 1995; Hajer and Wagenaar 2003).

The institutional perspective, instead, aims more at *"defining, classifying, and ordering public values"* (Davis and West 2009, 607). It originates in Bozeman (2002), who proposed a conceptual framework to justify public sector intervention. His stance arose as an alternative to efficiency and market failure criteria and postulates that market mechanisms lead to,

justify, and institutionalize public sector activity. - Note that Mazzucato (e.g. 2011), approximately a decade after Bozeman, called upon going beyond public sector intervention that would happen only under market failure. In her eyes, the market-based view artificially diminished the role of the state. Instead, allowing for a more purposeful state intervention would be required. - Jørgensen and Bozeman, following the market-based logic, developed a public values 'inventory' or 'public values universe' (see table), as they call it. They looked into values mentioned across 72 papers in the areas of public administration, organizational theory, efficiency and, to a lesser extent, political science literature linked to policy concerns, across the US, UK, and Scandinavia between 1990 and 2003. They encountered public values as distributed unevenly across eight constellations or nodal values that, taken together, encompass the entirety of a system of governance (Jørgensen and Bozeman 2007). See Table 1 below.

Table 1: Jørgensen and Bozeman's public values (2007, 371) - A public value institutional view, ordering and sorting value

Nodal Values, Neighbor Values, and Covalues

Nodal Value	Neighbor Values	Covalues
Human dignity	Citizens' self-development, citizen involvement, protection of the rights of the individual	Justice, benevolence, voice of the future, equity
Sustainability	Voice of the future	Stability, continuity, the common good, the public interest, moral standards, ethical consciousness, solidarity
Citizen involvement	The will of the people, listening to public opinion, responsiveness	Dialogue, balancing interests, self-development
Openness	Responsiveness, listening to public opinion	Accountability, rule of law, dialogue, democracy, the will of the people, collective choice
Secrecy		Stability, continuity, the rule of law, protection of the rights of the individual, productivity, effectiveness
Compromise	Balancing interests	Reasonableness, fairness, dialogue, adaptability, robustness
Integrity	Honesty, dignity, fairness, ethical consciousness, moral standards, professionalism, openness, impartiality, loyalty to the regime	
Robustness	Stability, adaptability, reliability	Legality, social cohesion, flexibility, responsiveness, rule of law, timeliness, effectiveness

To date, it remains unclear how that (institutional view based and ordering) inventory of public values - as a rather "rational" and "technocratic" view and *"distilling public values"* (Jørgensen and Bozeman 2002, 66) - is deployed and practically made use of. Latest additions to the public value triangle orientate instead around Moore's generative concept and ask how that triangle can be adapted to fit a multi-actor, co-creational work in which each of the involved actors follows own values to optimize for (Bryson et al. 2017). The categories and set of values around which Jørgensen and Bozeman simulate a governance system might be useful to keep in mind when making policy at international level, indeed as a value statement or code of conduct for the governing authorities. The value categories are, surely, heavily democratic in nature (see above). Moore's concept, too, includes that democracy and political forces remain the ultimate arbiter over value: Value, merely once agreed and deliberated on, can result in realized, operationalized value.

A fundamental limit behind the institutional perspective of public value is that it defines values from the view of the public administration. This is likely due to the nature of the disciplines that have led to it: Jørgensen and Bozeman reviewed 72 papers from the disciplines of public administration, organizational theory, efficiency, and political science literature; Kernaghan's work orientates around public value mission statements or ethical codes of conduct within public sector administrations. Also, Kernaghan draws upon *"statements on public-service values"* from four Westminster-style governments to research what shape public values may take on. Arguably, such views have limits when taking into account the values that matter for the individual or the public, whereas it is exactly for the latter that policy is being produced. - Moore defines them as the direct recipient, the owner, or the citizenry as such. - The institutional view, hence, remains confined by administrations' inward- rather than outward-looking parameters of value, similar to an egocentric business or policy model view.

Scholars confirm until today that Moore's PV approach provides a *"significant contribution to the theory and practice of public management"* (Bryson et al. 2017, 641). Attempts to update the triangle are, however, made. The PV concept and its adaptation attempts go well beyond just addressing shortcomings in the public value definition itself: Today's most recent propositions aim at ***replacing - or extending the notion of - the public manager****,* for instance, who is imagined to be at the center of the triangle. Critics hence judge the PV concept as too public manager centered and thus as downplaying other important actors in a multi-actor- or "multi-manager-centered" approach. Keeping the policy manager as the key reference would hence no longer be adequate in a world dominated by co-production or

multi-actor collaboration (Huxham et al. 2000; Pestoff, Osborne, and Brandsen 2006; Bovaird 2007). Bryson et al. 2017 replaced the public manager in the original concept by multiple facets, notably *actors*, *practices*, *arenas and spheres, public problems or challenges*, and *functions* (see Figure 4 copied from their work below*).* They ask how the triangle can be enlarged for or developed to better enable defining, producing, and sustaining public value through collaborative formats that strengthen democracy and are, consequently, more adequate to today's more complex contexts. They argue that, in the complex contexts that policy and its governance is embedded in, several authorizing environments and strategic collaborations are required.

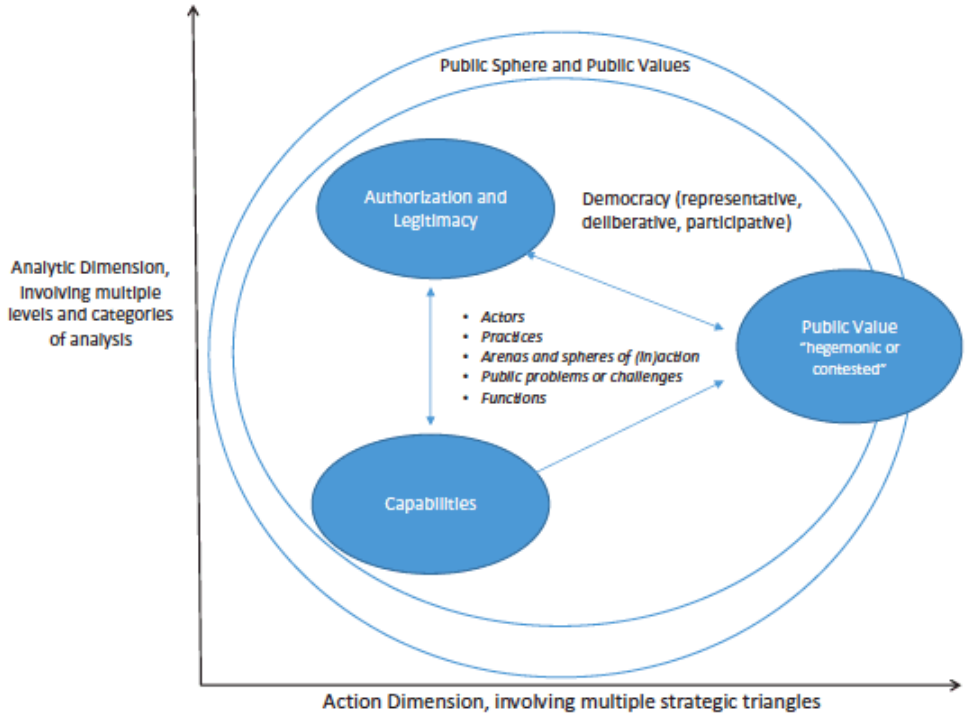


Figure 4: Explicit adaptation of strategic triangle “to a multi-actor, shared-power world” (Bryson et al. 2017, 647)

Earlier, scholars (Bryson, Crosby, and Bloomberg 2015) attempted to generalize the strategic triangle to more complex environments via what they call ***the ‘public value governance triangle’***. They place six general *practices* they postulate as important to PV creation in the middle. The six comprise: (1) *policy analysis, (2) design and evaluation; leadership; (3) dialogue and deliberation; (4) institutional and organizational design,* including *designing and implementing cross-sector collaborations; (5) formal and informal processes of democracy;* and *(6) strategic management,* including *performance management regimes and models.*

With their PV governance scheme they seem to be wanting to clarify that PV need be optimized for at every single stage that contributes to the making of policy - hence the term governance - i.e. the mechanisms, elements and processes constituting and hence "governing" the policy-making process.

Meynhardt (2015) develops a ***public value scorecard,*** yet another traditional management instrument that aims at better contextualizing the PV concept. His work aims to assess PV creation in different situations across sectors, thereby hoping to lead to better incorporation and understanding of the role of society's voice in PV creation. The latest triangle's adaptations today thus heighten the view on collaborative, more society-centric and user-facing approaches that public sector entities would have to adopt in order to create public value not to the detriment of but with the help of individual (actors') values (or their value triangles and expectations) - hence, value associations or (e-)valuations (for details on the interplay between individual and collective PV and experience recall section 2.1.2 A philosophical, moral-ethical, psychological account: The human element to public value).

To end this subsection, it is important to acknowledge that references to multi-actor contexts, collaboration, or individual-grounded (single actor centric) premises behind PV creation are present already in Moore's early strategic triangle concept, not just its adaptation over the past thirty years. Particularly *capability* and *legitimacy* point to a collaborative nature. Moore and Khagram (2004) specified that *"'real operational capabilities' [...] in the public sector, much of the capacity that a manager needed to produce public value lay outside the scope of the organization he could control directly […]"* (9). The same holds true for the fact that PV is grounded directly in individuals or is to be captured at individual level: Moore emphasizes at multiple occasions *"the primacy of individual preferences as the arbiter of social value".* In line with scholars previously, this thesis argues that the triangle model is a significant contribution to public sector management (Alford and O'Flynn 2009; J. Bryson et al. 2017; Stoker 2006) and remains valid until today. It is to be valued for its simplicity that encompasses important parameters as discussed in this section (e.g. multi-actor, collaborative, individual vs collaborative, generative and dynamic, to recapitulate just a few). Moore's PV triangle also implies, simply by the choice of the word 'public value', to aim at something more than purely an 'output' or 'outcome' from policymaking. Finally, and essential for interrogating the role of design, Moore's triangle refers to entrepreneurship and leadership (Bryson et al. 2017) as core qualities in the policy manager when *creating value for the public*, as opposed to *simply (passively) administering* for the public. This is essential

insofar as the role of design has always been to actively satisfy needs in a given societal context (consult section 2.4 for the analysis of design and design in policy).

2.3. Governance as collaboration and participation in policymaking

Section 2.1, e.g. Defining public value, has illustrated how public value is a fundamentally co-creative and a dynamic endeavor. Section 2.2 discussed extensively how the management of public value, thus the practice and processes of value creation - and their governance - require(s) a collaborative and multi-actor approach (recall Stoker, for instance). This section looks more closely into how different actors come together and interact 'in some way', as Meynhardt said, thus into what mechanisms and forms govern the 'how to'. In line with scholars illustrated in the previous section, it is uncontested that in networked, interrelated worlds, value can be achieved best through collaborative and multi-actor creation approaches, thus that the governance of public value needs be collaborative and shared (needs be "participatory").

Theories of governance provide competing definitions of governance and there is a general lack of conceptual clarity. In essence, *governance* itself can be understood as the way issues of common interest are managed by the collective under concern (CGG, 1995); it refers to the act of governing, be it in the public or private sector (Emerson, Nabatchi, and Balogh 2012). *"[M]ost definitions tend to emphasize the complex and decentred processes through which different actors contribute to the governing of society and the economy."* (Torfing and Triantafillou 2016, 20). Leixnering and Polzer (2013, 94) discuss public governance primarily as the *"malleable shapes and functions"* of public organizations for the management of the public sector, indicating a transformative nature between the state and the dynamic forms by which it manages its services (e.g., agencies, public private partnerships (PPPs), or multi stakeholder approaches). By today, notably ***collaborative governance (CG)*** has come to be

recognized as a legitimate and complementary way to making policy and implementing it[20] (Emerson and Nabatchi 2015; Ansell and Gash 2008). CG can be defined as:

"Governing arrangement where one or more public agencies directly engage non-state stakeholders in a collective decision-making process that is formal, consensus-oriented, and deliberative and that aims to make or implement public policy or manage public programs or assets." (Ansell and Gash 2008, 544)[21]

CG's focus is on the process of creating public value through the involvement of an array of actors that seek to engage in a collaborative decision-making process: *"Collaborative governance is a mechanism intended to bring together stakeholders from various sectors to design and implement policy."* (Lahat, Sher-Hadar, and Galnoor 2020). Primary concern of CG is to *"increase government's ability and capacity to govern, to reinforce trust and legitimacy in government, and to broaden inclusion in policy design and implementation."* (ibid, 1*).* CG is also considered a "democratic reconstruction", i.e., *"a strategy used in planning, regulation, policy-making, and public management to coordinate, adjudicate, and integrate the goals and interests of multiple stakeholders."* (Ansell 2012, 498)*:*

"Broad-based inclusion is not simply a reflection of the open and cooperative spirit of collaborative governance. It is at the heart of a legitimation process based on (1) the opportunity for stakeholders to deliberate with others about policy outcomes and (2) the claim that the policy outcome represents a broad-based consensus." (Ansell and Gash 2008, 556)

[20] Wicked problems and the context of shifting 'from government to governance' (Cleveland, 1972), i.e., acknowledging multilateral decision making as a format that would be able to address (wicked) problems better in a world that had grown ever more multilateral (Emerson and Nabatchi, 2015)

[21] Note that this research is particularly *not* looking into public private partnerships (PPPs). The topic of PPP is one with significant history in public administration. PPPs found their origin roughly 30 years ago in the UK and were adopted in the end of the 90s from governments in the west as well as by international organizations. Their purpose was to provide badly needed infrastructure, develop local economics, deliver public services, and renew urban areas. They were deployed to help navigate financial bottlenecks in public sector budgets to secure provision of public sector responsibilities (Wang, Xiong, and Guangdong 2018). Note that this research adopts the stance of PV literature, notably that governance needs to go beyond market failure or efficiency criteria (see sections 2.1 and 2.2). According to the researcher's interpretation of PPP literature, the concept of PPPs seems not exhaustive enough to focus on PV creation in the context of 21st century policymaking. Instead of a market shaper or creator, the public sector and public policy would continue to exist as a market fixer, crowding out other actors if adopting ambitious and new market shaping policies (Mazzucato and O'Donovan, 2016) instead of collaborating. This insight suggests that the PPP phenomenon has transformed into a type of governance scheme or mechanism in which the public sector would no longer be responsible to provide yet only to oversee actors outside of his sphere, in a collaborative setting.

As such, CG has become *"an umbrella term for myriad cross-boundary, multi-institutional arrangements that [...] is also spurring tremendous innovation."*(Emerson and Nabatchi 2015*,* 8) - be it related to the wicked problem or changing multi-level governance context or beyond. It seems the essential difference between public governance and collaborative governance is that the latter underlines managing interests jointly, as a collective of actors, and together *with* the public sector, as opposed to the public sector perceiving itself as exogenous or as a mere remote overseer instead of collaborator in the effort of creating value for the public. *"Collaborative governance is therefore a type of governance in which public and private actors work collectively in distinctive ways, using particular processes, to establish laws and rules for the provision of public goods"*[22], whereby actors can be considered individual citizens or organized groups (Ansell and Gash 2008, 545). CG is thus one way to governing PV creation or managing the (individual) interests thereto: CG is grounded in involving a wide set of actors, going beyond just the public sector, his manager or administrator, that bring a certain interest in deliberating and deciding jointly about public aspirations or future alternative states of play.

There is a lot to be explored as we bring PV and governance literature together in this section: Bryson et al. (2017, 647) point out that *"public value can be either 'hegemonic or contested.' Sometimes there is general agreement in a social context about what counts as public value, while at other times there is conflict. In the latter case, public value creation may involve struggles with deep political differences between various stakeholders and challenging navigation through hardnosed conflicts."* Ansell and Gash (2008, 547) explicitly distinguish CG from two policy-making patterns *'adversarialism'* and *'managerialism'*: the former as a winner-take-all type where adversarial stakeholders bear no interest in forming cooperative relationships beyond ad hoc calculated cooperative alliances or conflict. And under the latter, managerialism, public agencies decide unilaterally on processes that are not open to other actors, relying on experts to make decisions. The latter may account for stakeholder views or consult the former, yet stakeholders are not included in decision-making (Ansell and Gash 2008).

The deliberative project of policy stands in contrast with the rationalist (technocratic) model of policymaking (Fischer 2003). As outlined and juxtaposed, for instance, in Stone's 'Policy Paradox' (2002): The rational project concerns reasoned policy decision-making based upon

[22] See sections *Defining public value* or *The strategic value triangle* for the discussion of public value versus public goods, and how public value reaches beyond the understanding of public goods and market failure and/or efficiency considerations.

a calculated sequence of steps that are weighed and balanced against each other to obtain a policy-optimal outcome. While publicly framed as a "best way" or "formula", the rationalist approach entails covert strategies for framing issues in a way that benefit certain interests over others (Stone 2002). - There is thus some parallel with adversarialism. - It is bound to a logic of estimating consequences of available policy actions, attached values to identified consequences under each action, and calculating which actions yield the best results (Stone 2002). Similar to a cost-and-benefit analysis approach, arguments get presented as if they were *"a collection of scientific, neutral, techniques outside the political fray"* (Stone 2002, 485). It aims at a "rational, objective, efficient" policy-making process. Its careful weighing and balancing despise any kind of messiness, unpredictability, or subjectivity, central constituents of its deliberative counterpart. Moore and other aforementioned scholars confirm that policymaking is a 'fray', i.e., political debate. It is political and thus necessarily a process of argument and persuasion that comes with a sequence of identifying criteria and justifying action. Yet the deliberative approach replaces an "orderly" rationalist approach to policymaking and argues for a truly political, reasoned debate that resembles the one of a 'poetry audience' (Stone 2002, 383), that is, **a debate open to new visions (rather than results)**, **prepared to listen and read,** and that is **genuinely seeking new ways of understanding** (rather than elitist interest framing). **This deliberative approach** is, in fact, messy, unpredictable, and open to searching criteria and justifying choices based on the aspirations of a community as a whole - rather than a community fraction (either adversarialism or managerialism) – which leaves, of course, leeway to contradictory interpretations. Political deliberation and public discourse contribute to public value creation (Bohman 2010; Jørgensen and Rutgers 2015) and are, indeed, essential to it.

As we speak about collaborative or deliberative governance, we also need to address ***co-creation.*** Co-creation makes explicit the fact that non-state stakeholders have real responsibility for policy outcomes and are thus also fully involved in decision making (Ansell and Gash 2008). Co-creation can be defined as *"any act of collective creativity",* or *"creativity that is shared by two or more people"* (Simon 1969). Co-creation remains thus a wide category that describes collective efforts of all kinds of ideation and/or inventiveness. Relatedly, contemporary ideas and practices of co-creation are influenced by a wide spectrum of sources and societal spheres. Policy-makers, in particular, have recently turned to principles of co-creation (Bason et al. 2013; OECD 2011; 2015) as a central tenet in contemporary innovation discourse and practice (Hobday, Boddington, and Grantham 2011; Von Hippel 2006) to

purposefully assemble and fine-tune policies - or products - in an open and mutually responsive way that is both effective and socially acceptable.

Disposing indeed of myriad interpretations (public governance, collaborative governance, deliberation, assemblage, games, etc.) and definitions to date, as well as formats of how it unfolds in practice - from deliberative adversarial to managerial - (Chris Ansell and Gash 2008; Emerson and Nabatchi 2015; Huxham et al. 2000), CG is often used interchangeably or without much nuance - notably in design or policy domains - with ***participatory governance (PG).*** As its name says, PG's purpose is to augment citizen participation and deliberation through top-down or bottom-up participatory formats. PG's origin lies in closing the democratic deficit in today's political system: *"Participatory governance is a variant or subset of governance theory that puts emphasis on democratic engagement, in particular through deliberative practices"* (Fischer 2012, 457) and *"largely introduced to compensate for the failures of representative government to adequately connect citizens to their elected representatives"* (463). Fischer argues that governance in PG refers to *"a new space for decision-making"* that does not *"indicate the kinds of politics that take place"* (458). A central focus is to include traditionally less powerful, underrepresented or marginalized communities to better serve their needs from policymaking by better influencing the policies of mainstream institutions. The latter institutions, in charge of inclusion, comprise NGOs that are, as such, paving the way for a *"new breed of public servants"* that challenges *"standard techno-bureaucratic approaches of the modern state"* and reinterprets the role of the public servant as a *"facilitator of public engagement"* (Fischer 2009; 2012, 468-469).

Scholars emphasize that particularly successful PG approaches are those where co-created innovations are integrated in the policy processes of established governmental institutions (Fischer 2012). Examples from public budgeting in Porto Alegre, Brazil and people's development planning in Kerala, India, are often quoted as prime examples. In terms of audience, PG refers mostly to integration of citizens and civil society as the usually underrepresented communities in traditional policy approaches - rather than a wider array of institutional actors. Less than about interests, PG talks about 'needs' of the people. What remains interesting is that it clarifies more firmly than CG the decisive role of the moderator, thus the public servant, as a community manager rather than the expert and/ or technocrat in such PG-moderated formats of deliberative, co-created policymaking. It is important to highlight here that this thesis seeks not to make sense per se of the different definitions of governance, or to order, or structure them. What is aimed at, with this section, is to explore

deliberative approaches most used in the context of and coined today in relation to global policy, to identify the place of design practice in it, together with the governance mechanism(s) (thus processes of managing common interest with a given collective) that design proposes.

While, as just discussed, PG and CG vary in certain aspects, the most prominent analyses comparing CG and PG in theory and practice in the last decade suggest that the conditions that enable PG and CG to be successful are similar and complementary. Ansell and Gash (2008) developed a contingency model that details, based on an analysis of 137 case studies, conditions that enable CG to be successful. They specify that their analysis is based on *process outcomes*, given that too few studies at the time of analysis had evaluated governance outcomes, e.g., effectiveness of CG, readily enough. Their model bears four broad variables - *starting conditions, institutional design*, *leadership*, and *collaborative resources* - all holding sub-parameters that characterize them.

Table 2: Conditions that enable PG and CG, by Ansell and Gash (2008, 7)

Table 1
A Diagnostic or Logic Model Approach to Collaborative Governance

			The Collaborative Governance Regime					
			Collaborative Dynamics				Collaborative Outcomes	
Dimension and Components	System Context	Drivers	Principled Engagement	Shared Motivation	Capacity for Joint Action	Outputs Collaborative Actions	Impacts	Adaptation
Elements within Component	- Resource Conditions - Policy Legal Frameworks - Prior Failure to Address Issues - Political Dynamics/ Power Relations - Network Connectedness - Levels of Conflict/Trust - Socio-economic/ Cultural Health & Diversity	- Leadership - Consequential Incentives - Interdependence - Uncertainty	- Discovery - Definition - Deliberation - Determinaton	- Mutual Trust - Mutual Understanding - Internal Legitimacy - Shared Commitment	- Procedural/ Institutional Arrangements - Leadership - Knowledge - Resources	Will depend on context and charge, but might include: - Securing Endorsements - Enacting Policy, Law, or Rule - Marshalling Resources - Deploying Staff - Siting/ Permitting - Building/ Cleaning Up - Enacting New Management Practice - Monitoring Implementation - Enforcing Compliance	Will depend on context and charge, but aim is to alter pre-existing or projected conditions in System Context	- Change in System Context - Change in the CGR - Change in Collaboration Dynamics

Fisher (2012, 469) puts a greater emphasis on the *policy outcomes* of PG, underlining in a similar research that the inquiry into the conditions take on an important role in approaching policy from a collective angle: *"the task of sorting out the positive and negative elements*

contributing to the success and failure of such participatory projects thus takes on particular important new insights into questions that have long been ignored in traditional political analysis and in democratic theory in particular." He underlines four new perspectives that stand out to him, being the need to fill in (1) the "institutional void" that the theory of representative government fails to address, (2) the degree to which citizens can participate meaningfully in the complex decision processes that define contemporary policy-oriented politics. (3) The third is the ability to improve service delivery and social equity. And (4) the implications of participatory governance for the nature of professional practices. Fisher builds his model of empowered participatory governance on Fung and Wright (2003), who draw from three case studies on participatory capabilities of empowered citizens to engage in reason-based, action-oriented decision-making (as a political step toward a more democratic society).

Section 2.3 holds an analysis of literature on collaborative and participatory governance approaches in contemporary policy innovation. The role of multiple actors in creating value from policy today becomes evident and results, in fact, a quasi-uncontested one; it also spans way beyond just partnering as the public and the private sector (compare participatory governance). The nature of multiple actors' motivations - thus the degree of both legitimacy or authority - pertains as much to the political space (elected officials) as it does to the citizens' (democratic legitimacy and desirability as mediators to public value). The role of the policy manager - as a facilitative leader - remains and becomes even more critical as an orchestrator of the various camps, who carefully needs to navigate an even more critical multitude of different needs and preferences (under collaborative and participatory governance). The latter leads, from an or multiple individual value imagination(s) to a collective value experience that is imagined as *the one* to be sought for, democratically speaking. Of course, and as Bryson reminds us, multiple arenas - e.g. citizen-expert alliances - can arise and contribute to informing policymaking, a feature that seems to become key particularly in complex and wicked policy domains.

The question remains what processes can help facilitate increasingly concentrated (on public manager), pluralistic (engaging a broader set of voices/actors), and multiplied (parallel and next to each other across multiple arenas/public spheres) approaches to public value management, that are perceived as a key element to policy-making and its innovation in the sense of strengthening the government to do what citizens want to see done. The following sections will explore how design might be such a process, in the context of international

policy-making and its (global) governance, considering that design inspired recent co-creation ideas in the public sector (Ansell and Torfing 2021).

2.3.1 Policy innovation by design

Whether in policy itself, in business or in science, design and experimentation can be described as important building blocks in today's understanding of innovation and its co-creative practice. Design comprises:

> *"Approaches, methods and techniques used include interviewing or doing field studies of users, creating personas, visually mapping customer journeys, making and reviewing mock-ups of future services, devices or artefacts, organising cycles of feedback and iteration, and stakeholder engagement. Although many such methods and techniques were developed within commercial contexts, there is an established dialogue with Participatory Design, informed by its historical political commitment to involving workers."* (Simonsen and Robertson 2012; Kimbell and Bailey 2017a, 215).

In fact, design inspired the latest co-creation ideas in the public sector (Ansell and Torfing 2021). Design is adapted to engage citizens - the "policy end users" as the author of this thesis calls them - as well as public servants and front-line staff (or policy managers). All of the former are involved in developing or implementing policy and/or bring expertise to a policy issue. Critics of wide, user-centric engagement (e.g. von Busch and Palmas 2016) point to *"the danger of design diminishing dissent and uncritical support of elites."*[23] (Kimbell and Bailey 2017b). In design, collective creativity is known as 'participatory design' or 'co-design'[24], which refers to *"the creativity of designers and people not trained in design working together in the design development process"* (Sanders and Stappers 2008, 6). The two have emerged from the "participatory approach" that originated approximately forty years ago in Scandinavia. The initial purpose of the participatory approach was to increase employee workplace engagement (Bødker 1994). Under participatory design or the participatory approach, the user was treated as a partner to the creation of new ideas, i.e., she was being actively engaged in crafting whatever the issue to (co-)design for. Governance's focus on large-scale, global and systemic changes, or multi-stakeholder governance approaches to

[23] Compare Ansell and Gash's two policy-making patterns 'adversarialism' and 'managerialism'. See section 2.3.

[24] Just as in governance literature, collective creativity comes as collaborative or participatory governance, CG or PG, or the deliberative model. Consult section 2.3.

policy formulation (network governance, CG and PG), have brought increased focus on design, as a new tool to policymaking, over the past decade. *"Rather than presage a decline in attention to policy design, we would argue, the new institutional complexities revealed by the literature on governance call for a closer focus on it."* (Howlett and Lejano 2013, 367).

Design in policy focuses both on *the process and the outcome* (Howlett and Lejano 2013), similar to what Ansell proposes with deliberative social learning as a creative problem-solving process (as discussed in 2.3, main section on governance). While the origins, drivers, and contexts of policy design seem to be better analyzed, the underlying work argues that the outcomes from design in today's policy and its innovation - and even less so design as a practice behind policymaking and its governance - are still less understood and discussed. Most inquiry has been made into design as an instrument to innovation policy rather than design in policy innovation itself; only over the past decade, under the 'rebirth of design' (Howlett and Lejano, 2013), design has become a widely discussed practice in the support and quest for public sector innovation (Bason et al. 2013; Junginger 2014; Kimbell and Bailey 2017a; Villa Alvarez, Auricchio, and Mortati 2020). Much focus is laid on the design of public services, both in research (Junginger, 2016) and practice. Lately, attention has been paid to a sub-discipline of design, particularly the designerly prototyping in policy (Villa Alvarez, Auricchio, and Mortati 2020; Kimbell and Bailey 2017b). Other, more recent research focuses on the spaces or locus in which design in policy takes place, particularly innovation teams or labs (Puttick 2014; Tonurist, Kattel, and Lember 2015). The overwhelming majority of the quests on the role of design in policy to date are tied to the policy-making cycle, reflecting how design can be a fit as a part of this cycle (Coletti 2013; Junginger 2016; Villa Alvarez, Auricchio, and Mortati 2020; Bason 2013). Little is understood about how policy processes through design can better contribute to creating value from problem solving in complex, systemic policymaking. Bason hence asks: *"Might we create policy processes which more deliberately oscillate between understanding the nature of the problem and understanding the potential effectiveness of public action?"* (Bason 2016).

Design can help facilitate fundamentally different ways of both decision-making and implementation of policy, much beyond a traditional view in which the public policy sector is the only provider of a public service and governance seems to originate and be applicable to a public services entity only. Little knowledge exists about how CG applies to questions of policy innovation itself - design might be able to help build that bridge (Torfing and Triantafillou 2016, 3). Policy design might help enrich the research of CG literature, to stretch

design inquiry beyond policy-making process insights to policy-making outcomes (Chris Ansell and Gash 2008, 544). The exact relation between CG and purpose or value creation is still unresolved, with exception of, as already mentioned, the scholarly knowledge that design inspired co-creation in the public sector (Ansell and Torfing 2021). Design proposes to be a tool rooted in action to resolve for the needs of those who receive a service, i.e. a value or purpose in the sense of meaning for citizens vs meaning for public policy organizations (Huxham et al. 2000). Public governance in the sense of the 'public' must reach beyond seeing the public as a public administration issue.

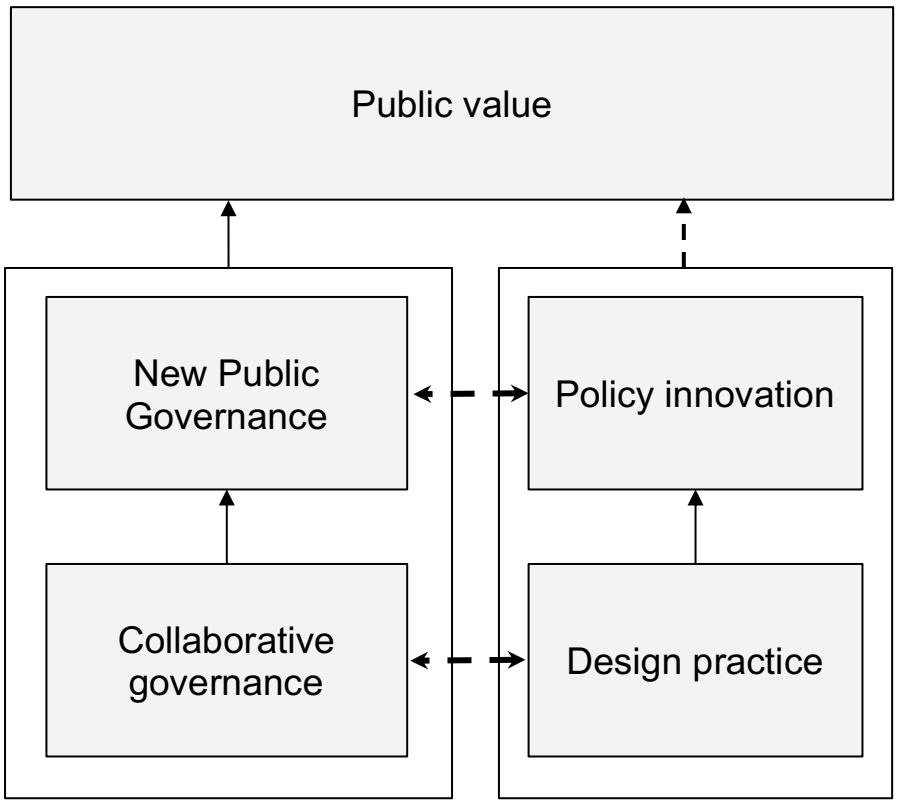


Figure 5: Framing and exploring design as a practice in international policymaking and in the context of global governance - A proposal how to read reviewed theory streams and their interrelation

This section clarifies how we can learn from new public governance and collaborative forms of governance literature about the values that policymaking should or could realize today. Both producing public value(s) and doing so collaboratively are core approaches that have evolved over the past two to three decades as a new public governance paradigm. The research on values is more established in the governance or the public management literature streams than in innovation or design. With the help of the more established literature streams

of policy value creation and governance, preliminary connections of how design could help support those values or the public value concept (including strategic value creation by the triangle) in theory can be drawn. Figure 5 illustrates well that design practice is already discussed as a practice to policy innovation and governing policymaking. The next section places that relevance in the context of global governance, in particular.

2.3.2 Policymaking in the international governance context

The international policy context lends itself particularly well to investigating the role of design in contributing to policy's strategic function, vision-setting and public value definition at scale in society: International institutions are considered contexts of *"policy promotion at international stage"* (Knill and Tosun 2008, 38). The political context in which policy decision and action unfold matters and there is considerable empirical evidence that internationalization affects domestic policymaking (Knill and Tosun 2008). International institutions shape significantly policy activities taken by national, domestic governments (Steinmo, Thelen, and Longstreth 1992; Knill and Tosun 2008). The EU or other international organizations such as the OECD or the World Bank for instance are contributing to diffusing particular policy approaches they consider propitious (Keck and Sikkink 1998). With the international realm being complex in nature, Knill and Tosun (2008) propose to look at the phenomenon through such underlying mechanisms of policy convergence, diffusion, or transfer. Oberthür and Tänzler (2002), on the example of climate policy, conclude that international institutions generate pressure and provide incentives for the adoption of policy innovations. In the field of social policies, transnational networks of professionals and communication between them have an essential role to play in how policy ideas and mechanisms travel (Knill and Tosun 2008). Despite national or domestic governments making the final decisions and adopting a mediator role (Radaelli 2000), international policy proposals and institutions can be expected to contribute at scale to what public value means and how respective policy ideas are brought into the world and implementation models are being promoted.

The international context is not just decisive in terms of formulating policy visions or ideas but also in enabling implementation. Policy scholars have learnt that, in policy, *"it is not only the policy design and the instrument choice that determines the likelihood of proper implementation."* (Knill and Tosun 2008, 18). From the lower governance level, namely the federal policy context, research knows that implementation of policies may be horizontal or

vertical, thus be deliberated and move between government levels as well as within them (Gerston 2014, 103). Under horizontal implementation, the number of actors contributing to implementation is limited and smooth (for example at federal level, one agency in the executive branch adopts policy). Vertical implementation requires various levels of national government to interact with various levels at subnational level, which complicates the undertaking. Albeit this example stems from insights in federal policymaking, one can glean that, in international policy, vertical (and horizontal) collaboration hierarchies play an equally crucial role in implementation or effective incorporation of policy proposals. - This is in line with what was found in section 2.2, from public value and strategic triangle literature, assessing that public policy capacitation depends on actors outside of the policy realm, and includes the private and third sector. - Collaboration hierarchies constitute and define roles and ownership in implementation of policy visions; relational hierarchies or interactions between them will be crucial for policy to be effective. Meaning, the decision-making institutions lend legitimacy, universality, and coercion to policies (Dye 2013, 12). The actors who are involved in policy deliberation processes are hence decisive: The relationship between public policy and institutions - or actors - is a close one since policy does not become a public policy until it is adopted, implemented, and enforced by the pertinent (government) institutions.

Next to the rational assumptions, and for the understanding of policy decision-making to become comprehensive and policy action effective, latest research in the realm emphasizes the need for a better understanding of the *cognitive* and *normative* determinants that actors and institutions bring into the policy-making process (Knill and Tosun 2008): Cognitive frames refer to schemes through which actors view and interpret the world (Campbell 2009, 382); normative ones are about values and attitudes that shape the actors' view of the world (Fischer 2003). Both their roles are decisive, as both cognitive and normative frames can enable but also constrain policy (Knill and Tosun 2008). To the author's knowledge and to date, there is no research in the policy literature that investigates how such cognitive and normative (e-)valuations are identified or taken into consideration. This research seeks to identify international policy visions grounded in collective value definitions with the support of design, that can help create public value from the perspective of society and the public sphere. It also links international policy with public value literature: Section 2.1.2, for instance, the philosophical and human essence behind public value, speaks extensively to how cognitive and normative frames - or the subjective-objective, individual and collective axis and experience from policy - can be enabled and achieved.

2.3.3 Policy in the technology governance context

The three investigated cases in this thesis show heavy links with technology and the governance of technology. Technology policy is "well established" in economics literature. Therein it is debated as a "corrective to market failure" (Metcalfe 1995, 27). It is also often discussed as a part of a conglomerate of "Innovation and Technology Policy": Technology policy is relevant in the latter conjunction given it is destined to promote a particular business or industry as such (Teubal 2002). As a corrective to market failure, it is important to recognize that technology policy remains ultimately a government intervention. Government interventions can also fail (Krueger 1990). Not automatically government policy will be welfare-improving, for instance (Metcalfe 1995). Other reasons for unsuccessful policy intervention at technology governance level are *"imperfect information, the separation between those who benefit and those who pay, bureaucratic capture, pressure group activity, and political myopia"* (Metcalfe 1995, 27). What is to be learnt from the economics view on policy is that: Technology policy remains, ultimately, policy. Issues regarding technology policy remain general, that is, concern the dynamics of general policymaking: notably that policy is in a way an information industry that requires broad information and input, the abyss between those who make and those who use policy (as Moore highlighted too for instance), the questions of who is involved in providing policy content or making decisions on the former, as well as lack of strategic capacities or focus on strategic questions of policymaking.

Today, and amongst policy theory and practitioner circles, technology governance debates more specifically artificial intelligence (AI)-driven requirements from policy. The OECD (2023) has recently reported that AI-driven technologies like, e.g., Generative AI *"[offer] transformative potential across multiple sectors such as education, entertainment, healthcare and scientific research."* - Generative AI systems create novel content— text, image, audio, and video—based on training data and prompts. They generate "synthetic context" but also assist users in real time (represent autonomous agents, e.g. to make bookings) across sectors (e.g., software development, creative industries, education, healthcare (Lorenz, Perset, and Berryhill 2023). - At the same time, such AI technologies, they say, *"pose critical societal and policy challenges that policy makers must confront"* (OECD 2023, 3). Amongst the policy challenges count labor market changes, copyright questions, and risk regarding

societal biases and the potential for misuse in the creation of disinformation and manipulated content, which entails mis- or disinformation or *"distortion of public discourse and markets"* (ibid). Again, the challenges of technology policy today seem tied to an information and knowledge production society. With governments *"recognis[ing] the transformative impact"* and *"actively working to address these challenges"* (ibid) technology policy, today, is too a policy that pursues the aforementioned intervention logic due to certain societal risks technology poses.

2.4. Design, its practice and thinking: an analysis pertinent for today's intl. governance context

This section synthesizes the general, theoretical underpinnings of what is referred to with design in the context of this underlying research: It discusses pertinent aspects of design for the application and analysis of design in the given intl. governance context, starting by a general analysis of what design is. It then refers to design in the context of wicked problems to solve, which lies at the core of policymaking. The section concludes discussing the latest insights of design as "relational design". For a dedicated synthesis of the state of the art of design in policy consult section 2.3.

2.4.1. What it means to design

Appeared for the first time in 1569 as a verb[25], (to) 'design', according to Merriam-Webster's Collegiate Dictionary, has various meanings: *"to conceive and plan out in the mind"*; *"to have as a purpose"*; *"to devise for a specific function or end"*. One of the perhaps most well-known definitions and most accepted connotations of design (as a verb) is 'to devise courses of action aimed at changing existing situations into preferred ones' (Simon, 1969). The

[25] Design became known as a noun roughly 30 years later, as "a particular purpose held in view by an individual or group"; as "deliberate, purposive planning; and as "a mental project or scheme in which means to an end are laid down".

meanings of design range from abstract conception to actual plans and processes required to execute those plans (Giacomin 2014, 607). Scholars point out that the appetite to design – to consider a certain condition, imagine a better one, and act to create it - dates back to the *homo habilis* manufacturing his first tools: *"Making tools helped us to become what we are, and design helped to make us human."* (DiSalvo, 2012). In fact, Charles Eames specifies design (the noun) as: *"A plan for arranging elements in such a way as to best accomplish a particular purpose."* (Eames 1972). Eames puts a strong emphasis on 'needs' as the essential underlying 'primary condition for the practice of design'. Irrespective of scale, i.e., 'the greatest number', expertise, or social status, design addresses itself 'to the need', he emphasizes. - In the 1920s, such a need was, for instance, to restore and secure standards of living after devastating consequences of warfare; ultimately, making use of industrial technology to produce designs paved the way for industrial design (Polaine, Løvlie, and Reason 2013). - Design is thus, first of all, a process that shapes an outcome. Planning toward a desired particular outcome - the purpose - is key and grounded in a particular need. Secondly, design must be orchestrated and executed by someone. Thirdly, design has an impact on someone (in line with the second part of the DiSalvo-argumentation: 'helped to make us human' [again]). A special relationship between the actor, who orders or 'devises' *to* design or *the* design and the recipient can be expected - or what would be commonly termed 'empathy': In fact, the design recipient shapes the design outcome, potentially through a need, whereby she may or may not be the designer herself. The design process seems to bridge a design intent with its impact, grounded in the actors and needs who stand at its beginning and end.

When talking about design and profusion into various domains by today (Latour 2008) one can no longer not talk about its global proliferation (and concretization) across industry, engineering, business, education, or also public policy (Carleton and Leifer 2009) as *design thinking (DT)* (Gobble 2014; Dorst 2011). *"Design thinking packages a designer's way of working for a non-designer audience by codifying their processes into a prescriptive, step-by-step approach to creative problem solving — claiming that it can be applied by anyone to any problem."* (McCausland 2020, 59). *"Thinking like a designer can transform the way you develop products, services, processes – and even strategy"*, goes the opening to the 2008 Harvard Business Review (HBR) article that interviews the CEO of design consultancy IDEO about design thinking (Brown 2008). Numerous intentions instilled in DT may have driven design adoption as a whole across many disciplines, all the way through to corporate strategic management and the public sector arena: DT's empowering postulates that everybody can be an active creator of change; its push for a more thoughtful and active

reflection about *"what kind of change is needed"* (Bason and Austin 2019); or the fact that DT is said to *reimagine established ways of doing*, e.g. by *"bringing empathy back to business, making time for creative stimulation, conducting many experiments, and identifying innovation opportunities"* (Kelley and Radziszewski 2019) are all reflected by scholars as essential contributors to the evolution of design practice as design thinking (McCausland 2020).

2.4.2. Design at the center of wicked problems to solve

It is generally debatable why DT came to be so closely associated with a genuinely empowering, thoughtfully creative, and opportunity-rich craft and what that implies for design's aptitude to address today's society's problem-solving capacities. Scholars elaborated on the notion of Rittel and Webber's (1973) 'wicked problems' – problems that are unique, ambiguous and have no definite solution - with regards to DT (Buchanan 1992). Rittel and Webber (ibid) explained that the circumstance of the wicked problem results in a situation where no true or false solution could ever be achieved: Problems cannot be solved. *"At best they are only re-solved – over and over again",* they state (136). Thereby Rittel and Webber acknowledged that the resolution of one problem led to the development of further problems. Such wicked problem dynamic would call for a more creative approach; and DT is seen as a particularly apt technique to do so, as the method *"ha[d] been tried and tested with socially ambiguous problem settings […]"* (Rauth et al. 2010). Rittel believed that science could not resolve open, evolving, and ambiguous problems: *"As distinguished from problems in the natural sciences, which are definable and separable and may have solutions that are findable, the problem of governmental planning – especially those of social or policy planning – are ill-defined."* (136).

Herbert Simon's *The Sciences of the Artificial* (1969) – or objects created by man - is often alluded to as the cradle of what is understood by 'design' today (Dunne and Martin 2006; Junginger 2016). Rooted firmly in, and shaped by, the computer science/engineering disciplines through Simon (*ibid*) and many others[26] DT could be seen as a problem-solving technique as much as it is engineering. Simon (*ibid*) proclaims that the human brain - as well

[26] Design thinking is not new and was developed throughout the 1970s and 1980s by various scholars and practitioners. While described from the architectural and urban design lens through Rowe's seminal book 'Design Thinking' in 1987, many of the influential actors in DT were (some of them still are) part of the ecosystem of the Stanford University's Department of Mechanical Engineering. Hasso Plattner, David Kelley, Larry Leifer, Tim Brown, Bernie Roth are just a handful of names to coin of those who have had a prominent role in laying the foundations for DT (Di Russo 2013), including its diffusion.

as the computer and any artifact the human designs - has limits and is, therefore, required not to search for a final goal when facing problems in what today is termed a wicked problem. Neither the computer nor our brains would be able to understand the complexities of this external environment. In fact, this would be a void endeavor. Instead, *"[t]o understand them, the systems had to be constructed, and their behavior observed"*. In essence, the best humans could do is to approximate, see Figure 6 below. Edison's approach during the invention of the light bulb has become one of the most widely quoted examples to clarify the intention of design in mainstream and practice literature, leveraged on multiple occasions by DT thought leader and design consultancy IDEO CEO Tim Brown as one that *"was not to test, yet to explore. His approach was intended not to validate preconceived hypotheses but to help experimenters learn something new from each iterative stab."* (Brown, 2008, 2009). From this it seems clear that design solutions begin to be constructed already in the problem definition stage, iterated and 'remade' through the problem framing throughout the design approach.

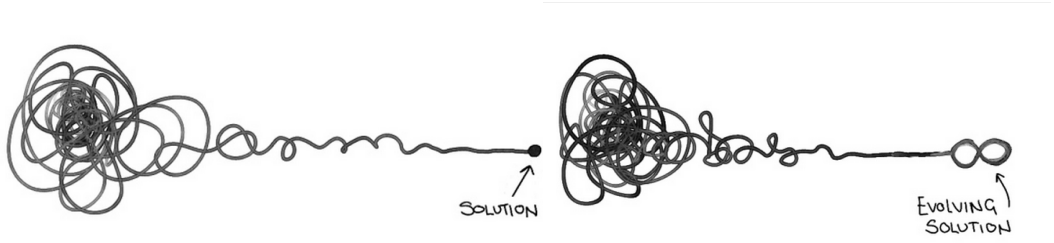


Figure 6: Deterministic and probabilistic design thinking process (Di Russo 2013; 2016)

It is relevant to keep in mind that Rittel and Weber (ibid), unlike Simon (or others), have not coined the term 'wicked problem' in conjunction with design as product design, engineering, or the arts ('form and function'), yet with regards to (public) policy planning and social problems. Simon, on the other hand, has not explicitly elaborated on the complexities of the external world, yet rather speaks about the bounded rationality of the actors within it (van der Jagt et al. 2020), notably the individual mind's internal information-processing capacity. Buchanan's publication *Wicked Problems in Design Thinking* introduced and mainstreamed the interconnection between wicked problems - i.e., the public policy space - and design thinking, though still linking it to the bounded rationality of the principal, designing actor: "*Design problems are 'indeterminate' and 'wicked' because design has no special subject matter of its own apart from what a designer conceives it to be*." (Buchanan 1992, 16).

It seems that the empowering, imaginative, human-centered and creativity-stimulating soul of DT is not to be ascribed to a genuinely and almighty, creatively artistic character, yet rather to bounded rationality (and perhaps its bounded problem definitions). Rittel (ibid) himself seems to support that argument as he speaks about definability and separability as subjective qualities ascribed to a problem - wicked or not – by the actor who oversees defining the qualities of the problem. Therefore, it would be obsolete to ask who designs - an artist, a policymaker, an engineer, a software specialist – all such agents are, respectively, subject to their individual, bounded rationality. Rowe's (1987) *Design Thinking* calls them 'styles of decision-making' in his inquiry of design as modes or procedures for problem-solving (based on case studies in the field of architecture and urban planning): *"[T]here is no such thing as the design process in the restricted sense of an ideal step-by-step technique. There are many different styles of decision-making [...]." (*2). He reminds us, similar to Simon, that constraints emanate as *"a mixture of both"* initial setting of the problem (he talks about the context in which a design is to be placed, or the social purpose) and a designer's personal attitudes and prejudices (techniques of fabrication, for instance), *"as designers move back and forth between the problem as given and the tentative proposals they have in mind." (2).* **In other words, we may as well all be designers, yet each and every individual's design will depend to a given degree on the limits of each and every individual's mind.** What may change is the kind of rationality that is bound, i.e., more or less artistic or scientific, more or less exposed to policy, engineering or other disciplines. Designers rely on *"presuppositions and hunches"* about their field *"at least as much as on information furnished during orderly confrontation with the constraints found in a given design problem."* (Rowe 1987, 3).

From the above analysis, **rather than describing the power of design and designer in various domains by limiting them, respectively, to iterative process and their particular designerly creativity, real success from design to effectively solve problems (of the wicked kind) seems to lie in optimizing for possibilities to overcome bounded rationalities.** Bringing multiple, diverse bounded rationalities together in a co-productive environment - i.e. actors with their mindsets, viewpoints, experience, capacities - might eventually unbind us from individual actors' boundedness - be it a designer, an engineer, a manager, a policy-maker who design or design-think - when trying to find a mechanism that helps frame and (re-)solve problems. Similarly, successful design approaches are humble: They are less concerned - than perhaps engineering or public policy (and the political expectations on them) - to solve a problem once and for all. It is perhaps that latter illusive ambition that makes problems 'too-big-to-be-addressed' in the first place. Let us recall from further up: *"Design problems are 'indeterminate' and 'wicked' because design has no special*

subject matter of its own apart from what a designer conceives it to be." (Buchanan 1992, 16). That implies that the more inclusive and participatory the design process - i.e., the more empowered (co-)designers in the design process - the less dominant the expectation on one particular actor and the higher the chance we overcome bounded rationality and linked presumptuous consequences or expectations on single designing actors.

2.4.3. Design as building for encounters: co-design, co-creation, relations

The roles of the actors involved in the design process - the designer, the researcher, and the 'user', for whom one used to design – are changing: Renown scholars highlight, for instance, the increasing 'fuzziness' of the design process front-end going from user-centered (user as subject) to user-partnered design: The design funnel front-end, that informs the exploration phase, grows as designers move closer to the future users they design for, and due to the activities taking place to inform and inspire the designer (Sanders and Stappers 2008). How such an encounter is structured depends on the degree of openness chosen: The practice of collective creativity in design, for instance, has been known for roughly 40 years now under the name 'participatory design'. The participatory approach (*'user as partner')* originated in Scandinavia to increase employee workplace integration (Bødker 1994). The so-called user-centered design approach, on the other hand, where the user is seen as a passive rather than active and engaged subject *('user as subject'*) is seen as a US-driven phenomenon deployed over the last seven decades. Since the 1970s people have obtained a voice to provide expertise and participate in early prototyping stages (Sanders and Stappers 2008). Regardless of the exact proximity, **design seems to be an act of creating opportunities to meet, between the ones that is being designed for and the ones who design for the latter, to uncover, make sense of, and integrate their perspectives and needs. Design is fundamentally about creating points of encounter for impact through process**.

While both the participatory and user-centered approach seem to slowly grow together, the notions of 'co-creation' and 'co-design' can be attributed to the domain of the participatory approach (Sanders and Stappers 2008). Co-creation refers to any act of collective creativity, i.e. creativity that is shared by two or more people (Simon 1969). 'Co-design' refers to *"the creativity of designers and people not trained in design working together in the design development process."* (Sanders and Stappers 2008). Co-design thus indicates an applied

collective creativity potentially throughout the entire span of a design process and is a specific occurrence of co-creation facilitated through a design process. Co-design as a concept seems to imply a hierarchy, or, at least a dichotomy, between the trained and untrained designer and their relationship. It emphasizes the position in the given creative constellation or instance. Co-creation, based on the above definition, focuses more on the act of creating, and the art of creating in a collective, regardless of the difference in expertise the actors bring or the practice they can fulfill. In fact, scholars have already critiqued user-centered design for maintaining instead of changing the status quo, and for upholding elitist structures (von Busch and Palmas 2016). **(Co-)Design might protract a dedicated, elitist, controlled action where an actor hierarchy, despite good intentions to open a process of creation, predominates the act of creating or designing together. The consequence might be the protraction of bounded rationalities, too.**

In service design, the relationship between those designed for and those designing is center stage. Scholars define service design as a human-centered approach and an outside-in perspective to service development concerned with systematically applying design methodology and principles to the design of services (Holmlid and Evenson 2008; Holmlid 2007; Mager 2009). Both interaction design and experience design gained traction in the 1990s as major user-centered design practices, to a great part attributable to the rapid evolution of the internet; service design spread out from interaction design in the early 2000s (Holmlid 2007). Designing 'device interactions' (user with interface) gradually evolved into designing 'service interactions' (a user with a service), strongly fomented by the transition to the service economy (Sangiorgi 2009; Holmlid 2007). Since the first decade of the 21st century, service design has expanded reach, scale, and kind of involvement, with users engaging through *"involvement techniques based on collaborative ideals"* (Holmlid 2012, 105): It has scaled its practice from 'one-to-one' to 'many-to-many interactions' and has expanded to cover increasingly sophisticated challenges and interventions with a wider number of stakeholders and professions (Sangiorgi 2009). Miller (2015) presents a definition of service design for practitioners that is crowdsourced. It equally focuses on human-centeredness in the integration of the customer perspective but refers more explicitly to the elements that constitute the business and customer interaction as such, thus, 'many-to-many' or at least 'many-to-one' (from the business backend to at least an archetypal user instead of an entire user base) relations: *"Service design helps organizations see their services from a customer perspective. It is an approach to designing services that balances the needs of the customer with the needs of the business, aiming to create seamless and quality service experiences. [...] Through collaborative methods that engage both customers and service*

delivery teams, service design helps organizations gain true, end-to-end understanding of their services, enabling holistic and meaningful improvements."[27]

In fact, in recent service design practice and discourse, 'service ecosystems' (Vargo and Lusch 2016), 'platforms', 'transformations', and 'co-creation' have become diffused terms (Holmlid 2012) and multiple perspectives are synchronized in service design when it is described as the result of co-production among different stakeholders. Van der Jagt et al. (2020) present findings that flag the importance of 'agency' as a dimension to design innovation, defining it as *"people and organizations in the stakeholder landscape taking up leading roles (e.g. champions, mayoral leadership, frontrunners, etc.) to support"* design innovation and their systems development (207). Research emphasizes the resulting need for *"more clearly articulated mechanisms of (often massive-scale) coordination and cooperation"* (Vargo and Lusch 2016, 5) that underlies value co-creation not just in markets but for society overall (ibid). Research equally concludes that service design, just as participatory design, is fundamentally emancipatory as it follows democratic, power-driven, or sustainability-oriented goals, and makes use of 'engaged involvement' and 'participative techniques' to enact those goals (Holmlid 2012). Pacenti (2004) clarifies in fact that services start to exist when relations evolve: *"The unique trait really defining the essence of service theory and design is that it produces itself in a relation between system and users. Services are first of all relations between service providers and users; interaction becomes the idea that underlies the definition of service."* (151). This **implies that the key to creating value in today's service- and ecosystem-driven era is understanding and managing the (inter-)relations that make or break society (and/or markets) in the first place, whereby the character of the relations and its rationalities will determine significantly the character of value that will be created.**

The domain of social innovation[28] has, over recent years, extensively described the importance of enabling new compositions of relations through service design, which would

[27] Full definition: ***"****Service design helps organizations see their services from a customer perspective. It is an approach to designing services that balances the needs of the customer with the needs of the business, aiming to create seamless and quality service experiences. Service design is rooted in design thinking, and brings a creative, human-centered process to service improvement and designing new services. Through collaborative methods that engage both customers and service delivery teams, service design helps organizations gain true, end-to-end understanding of their services, enabling holistic and meaningful improvements."*

[28] Social innovation can be defined as *"the creation of long-lasting outcomes that aim to address societal needs by fundamentally changing the relationships, positions and rules between the involved stakeholders, through an open process of participation, exchange and collaboration with relevant stakeholders, including end users, thereby crossing organizational boundaries and jurisdictions."* (Voorberg, Bekkers, and Tummers 2015, 1334).

leverage social capital in order to create better solutions to face societal demands or challenges (Cipolla et al. 2016). Analysis of social innovation practice suggests that service models are fundamentally based on the quality of interpersonal relations between participants (Mulgan et al. 2007). Based thereon, Cipolla and Manzini (2009) present design as helping to understand and favor the qualities of 'relational services'. They refer to relational services as service configurations that are conditional upon intensive interpersonal relations in order to function; and to relations as *"results of "openness" to others"* (47). They base themselves on a framework in which participants *"are seen neither as users or clients nor as theoretical "humans" but as "relational" beings."* (46). The essence of service design in social innovation - i.e., the quality of interpersonal relationships of the service - depends on the extent to which me-you relationships are taking place. An example they cite is the walking school bus, where relations produce together not just a service of transport but a joining narrative and identity. Service design is no longer just about an instance in which a service is delivered, e.g. a momentary service encounter or one-off device interaction. Rather, it is about reciprocal change of interpersonal perceptions through which each participant acts as a *"presence"* (49) to each other, including the designer himself. None of the actors in the design process is seen as an object but can actually be *'reached'* (49), which is described as the predominant purpose: *"[T]he other person may hurt or betray me, but first and foremost can reach me."* (49). With these suggestions, the concept of relational services in social innovation seems to co-evolve with latest evolutions in the definition of human-centered design (HCD), in which HCD is characterized as an evolving discourse of search for human meaning (Giacomin 2014), no longer limited - as criticized by renowned scholars in the past - in possibilities for interaction, exploration, and learning (Gasson 2003), or predetermined functions, schemes, or scope (Norman 2005; Suchman 2007)[29]: *"A human-centered approach begins with the person; with her goals, what she does, what she wants to achieve, what she experiences."* (Holmlid and Evenson 2008, 342). The core contribution of design interventions are the "meta-design", i.e., the design to *"start up, support, continuously sustain"* the production of the *"interpersonal encounters"* and their qualities (Cipolla and Manzini 2009, 50).

If design creates the fabric of agency, platforms, gatherings and relations that establish the ground truth to solve societal needs, designing interactions or relations can perhaps no

[29] Traditionally, HCD is equally rooted in investigating *relations*: it emanates from fields like ergonomics, computer science, and AI, altogether engineering-based approaches that look into the relationship between a user and a tool. Seminal scholarly work in the past decades, with Lucy Suchmann's work paving the way for it, has come to criticize interaction design and user-centered approaches as limited in scope.

longer be considered a question of meta-design, but rather *the* design. Previously pioneering scholarly work on design should remind us that *"the quality of design is distinguished not merely by technical skill of execution or by aesthetic vision but by the moral and intellectual purpose toward which technical and artistic skill is directed."* (Buchanan 2001b, 38). Papanek (1972) has addressed this area of tension already five decades ago in the domain of industrial and product design. Irrespective of the realm in which we design, we today live in an era of value creation through services and can transfer learnings from previous design eras to today's: *"[D]esign practice has done a marvellous job of inventing the practical skills for drawing objects, from architectural drawing, mechanic blueprints, scale models, prototyping etc. But what has always been missing from those marvellous drawings (designs in the literal sense) are an impression of the controversies and the many contradicting stakeholders that are born within these"* (Latour 2008, 12).

In this context of value- and meaning-seeking, it will be crucial for the design discipline to establish the right balance between those taking agency and thus being in 'leadership' or 'power' (van der Jagt et al. 2020) positions to establish, manage, and understand (new) relations and those who are not. As Faste (1987, 2) put it, already the process of needfinding is *"a very personal activity which is profoundly influenced by the finder's current state of being, motivation, point of view, and personal needs."* In Dewey's understanding, democratic societies are seeking to attain desirable goals while also debating what a desirable goal is (Bohman 2010; Dewey 1954). Design can only appear and is only possible "*in a context in which people see themselves as not powerless actors.*", so Peter Sloterdijk (Kapitale Berlin 2012)**;** a context in which *"social becomes an opportunity, instead of a problem"* (Cipolla et al. 2016, 367). Whether design is competent to advance this goal, or remains a demonstration of a competence of incompetence, as Sloterdijk debates (ibid), will be a matter of exact design practice and design intent deployed.

2.5. Design in policy

While the preceding chapters investigate policy and its innovation, the notion of public value, and a synthesis on design and design practice, this chapter summarizes state of the art literature in design in the public sector, widely referred to as 'design for policy'. It addresses the promises from design in public policy, linking it to value creation and related key parameters important for this research. It equally discusses limitations in the design for policy

approach. In design in policy, today, the essence is - as seen through the previous section's theoretical analysis - to combine both systems and people. That means that a mere (wicked) problem focus is no longer sufficient for policy. This latter limitation is a door opener to critique the narrow view of design in policy today and illustrates how notions of problem- and user-centered will need to expand to leverage design's potential in policymaking when adopted in the context of international governance.

2.5.1. The value from design in policymaking

Contemporary design approaches to innovation in the public sector have been discussed over the past decade across a range of contexts, predominantly from a practice perspective. More recently, over the past five to ten years, this has been considered increasingly from the research side. Topics looked at comprise actors, organizational dynamics, instruments, or design in the wider public policy innovation context, covering: design management, i.e. the role of policy leadership or the public manager (O'Leary and Bingham 2009; Bason 2017; Cooper, Junginger, and Lockwood 2013); the role of the designer (Considine, Alexander, and Lewis 2014; Lavee, Cohen, and Nouman 2018); design and policy innovation labs or teams, as the spaces or locus in which design takes place (Puttick 2014; Tonurist, Kattel, and Lember 2015; Vaz and Prendeville 2019; Kontschieder 2020; Junginger 2014); design as a vehicle for public policy innovation, from the organizational or policy management angle (Bason 2010; 2013; Christensen and Junginger 2014; Junginger and Christensen 2013; Junginger and Sangiorgi 2009; Vaz and Prendeville 2019; Junginger 2016); design and particular (sub-)methods or approaches in policy contexts, such as prototyping policy (Kontschieder 2018; Villa Alvarez, Auricchio, and Mortati 2020; Kimbell and Bailey 2017b); (public) service design (Heapy 2006; Junginger and Sangiorgi 2009; Cooper and Junginger 2011); experience design (Carr et al. 2011); and more recently, human-centered design (Holeman and Kane 2020; Bason 2017), and to some extent design thinking (Plattner, Meinel, and Leifer 2016; Christopher Ansell and Torfing 2014; von Busch and Palmas 2016). Related to design in policy, one can also witness research in design for social innovation (Mulgan et al. 2007; Manzini 2015; Manzini and Staszowski 2013; Brown and Wyatt 2010; Cipolla and Moura 2011). Much of this research and practice look at design as an instrument that changes the process of making policy, predominantly linking it back to the policy-making cycle (Vaz and Prendeville 2019; Villa Alvarez, Auricchio, and Mortati 2020; Junginger 2016), or referring

to design as a 'tool' that helps build better public policy. While design for policy might change the way we *make* policy, the fundamental question that is less addressed remains whether it also changes policy outcomes - the value of policy - for the better, or, thought more widely, what potential design holds to shape, refine, augment the value that can be created through public policy (compare figure 1).

To elaborate on value created through public policy, the researcher looks into a recent and important piece that relates directly to the field and questions this relation more than previous research has done: Christian Bason's *Design for Policy* (2016). The book aims to tie design to sustainable and social impact practices and is a collection of 16 different research contributions by different prominent scholars in the field (including Bason himself), equally linking back to practical examples from design in policy. Bason's concluding chapter analyses and connects the different contributions, reflecting on the scholarly, theoretical, and practical case studies (or both) and thereby tries to approximate *"an alternative model for policymaking"* and *"the value of design for policy"*, as he says himself (259). His final chapter equally asks: *"what does design 'do' differently when applied in a policy or public service setting?"* (259), which presents a rough first idea as to how to look at value from design in policy. Overall, the book proposes design as a *"reinvention of the policy process which emphasizes real world impact and change over 'rationality' as an end in itself"* (259). The contributions within the book continue to refer substantially to the integration of design in the process of policymaking itself, rather than focusing on the impact from policy once it was being created and implemented by design. The latter approach would go beyond the view of trying to inquire about design or squeeze it into some stage of the policy-making model, which confines design to a mechanism integrated in a policy-making model as is, rather than rethinking the latter through design.

However, design in policy is not just policy design. Policy design, as Howlett (2010) proposes, focuses on the proper choice of public policy instruments that public administration and the public servant have at their disposal to realize an optimal policy goal, thus optimizing the choice of alternative paths to best realize a given policy goal. *"[Policy design] is an activity conducted by a number of policy actors in the hope of improving policy-making and policy outcomes through the accurate anticipation of the consequences of government actions and the articulation of specific courses of action to be followed."* (Howlett and Lejano 2013, 358). The scholars emphasize further that *"[...] all governments who wish to have their goals effectively achieved in an efficient way, through employment of knowledge and empirical data*

to assess the appropriateness of policy means, engage in "design" (ibid). Today's approach of design for policy seems to follow a different rationale, that seems to rather be in line with Dryzek (1983). He argues to go away from viewing policy as a *choice* of policy alternatives and instead to focus on the process of designing: *"Policy design may be defined as the process of inventing, developing and fine-tuning a course of action with the amelioration of some problem or the achievement of some target in mind."* (Dryzek 1983, 346). Design in policy is not just about a definitive, abstract choice of the instruments that lead to highest policy effectiveness. Instead, it focuses on a process that enables reaching one target or another, where the path itself lays the foundation for action, always conscious that the path can change and, with it, its outcomes.

In fact, much discussion on a focus of pre-calculated analysis (or rationality) versus inherent creativity behind the process of policy design, and design in policy, seems to be a long standing and at least decade-long debate, reaching until the most recent discourses in the field. Junginger only recently - decades after Dryzek and years after Howlett's initial works - underlines that *"we must challenge the emphasis on policymaking as decision-making based on seemingly rational and objective models."* (Junginger 2014, 23). Bason poses the question whether the 'economic man' process (or intelligence-design-choice) will prevail or whether the *"alternative design-intelligence-choice model"* will take off, whereby only the latter would *"allow policymakers to shift their stance and their practice"* alongside design in policy (Bason 2016, 265–66). He synthesizes the path towards design for policy in a table that juxtaposes the contemporary, rational with the rather creative, design-based approach (see Table 3).

Table 3: Key directions of design in policy: Proposals for an emerging discipline in the established policy profession (Bason 2016, 266: 'Towards design for policy')

Current policy model (Intelligence-design-choice)	**Design for policy (Design-intelligence-choice)**
Resisting complexity	Embracing complexity
Problem-oriented; reactive	Vision-oriented; proactive
System focus	Citizen focus
Unilateral action	Shaping new alliances
Facilitation	Stewardship
Strategy emphasis	Impact emphasis

Bason does not necessarily contrast the two worlds; at least he contextualizes by clarifying that we are not ready to abandon rational models. This is in line with Junginger who equally

argues that both worlds can co-exist. All in all, they argue that *"there is still space for design as a 'classic' problem-solving activity in government."* (Bason 2016, 262). Amatullo emphasizes how the crafting of *new* meanings, values, practices, and relationships takes place continuously amidst the already existing dominant culture (Amatullo 2014), pointing to the fact that design is not a pre- or post-stage, but is effectively part of the transition itself. It needs to speak to both worlds. Creating two camps of design in policy can be highly problematic: Focusing on debates like legitimacy stemming from whether we use a creative or rational, an iterative or linear, or designerly versus classic approach might prevent us from adopting the viewpoint that is ultimately essential to deploying design in the public sector: Namely, how do we get to value from policymaking and for whom? Focus needs to lie with how design can be deployed in a world where value or impact concerns and the question of purpose from policy prevail over realizing goals based on one over another tool or instrument, be the latter rational or creative, traditional, or new approaches or means. One needs to ask, at a more strategic level, too: Why is design still fundamentally limited to its instrumental function of enriching the policy-making process instead of asking what value policy brings to the policy recipient once policy is enriched by design? Or how can the purpose of policy be interrogated with or through design in the first place?

The question remains how design policy scholars have discussed the value of design from the design for policy perspective. Many express explicitly or implicitly that design is a possible solution to provide more and better public services for less money (Bason 2016); design thus being a way to **reach greater efficiency or effectiveness in policy.** The former is said to be particularly required in the context of complexity. To be exact, design is said to hold *"the ability to incorporate the complexity and uncertainty of an everchanging context"* (ibid, 263), thus **increasing capacity to respond to contextual requirements through flexibility.** In a third conception, design would allow for an integrated view of policymaking and policy implementation*,* the two major pillars to policy-making (Junginger 2016; Bason 2016), thus **collapsing abstract assumptions with real-world evidence from implementation** to develop policy in a more amalgamated fashion. The policy cycle model, as it is generally known (Howlett, Ramesh, and Perl 2009; Lasswell 1956) depicts the stages that lead up to obtaining a final policy - usually comprising *problem definition*, *agenda-setting*, *policy formulation*, *decision-making*, *implementation,* and *evaluation* - whereby the initial four are seen as pertaining to the realm of policymaking and the remaining two to policy implementation. Yet other scholars deem design to be a good way to present complex issues in an understandable way, making problems experientially available to stakeholders which

yet again allows for higher quality conversations of problems and solutions (Halse 2016) - thus **making issues and their building blocks accessible and "empathizable" across a variety of actors.** These four promises of design for policy, distilled from latest conversations in the field, seem to speak towards value propositions in the business management or organizational change sense. They address the advantage from integrating design into the policy-making organizations' sphere. Detailed references to how the value that design creates between the public institutions' sphere and those who make use of or experience impact from the latter seem not to exist; they merely lead to speculations, e.g., about greater efficiencies or accessibility automatically creating value to, e.g., citizens or other policy recipients.

What, then, about designing as *crafting* in the context of policy, thus defining purpose for society through policy and the task of *creating* the/a society of tomorrow? Scholars emphasize the more entrepreneurial, future- and impact-oriented value that design can bring in the policy context: Bason calls it *"from problem-solving to envisioning new futures"* or "*[d]esign is about being able to envision a desirable future and developing a way for this future to become a reality."* (Bason 2016, 263). Design is said to help policymakers be aware of problems and simultaneously, solutions that they would not have usually considered (Junginger 2014). Design is thus being proposed as **enlarging the entrepreneurial perspectives of maneuver to policymakers.** Junginger argues that once we (re-)think policy-making as designing *"designing becomes a means of inquiry and invention, of envisioning and of developing new possibilities for useful, usable and desirable policies"* thereby going beyond *"responsive and reactive designing"* (Junginger 2014, 86). Design can equally be an engine for the collective construction of the future. Manzini (2014) views design as a way to nurture a social conversation through images or proposals that consequently leads to a shared vision. In this way, social conversation transforms into a process of **building (alternative) visions for the future, based on 'users' acting as collaborative citizens,** recognizing not only their needs, but also their capabilities, their social networks and the cultural and economic conditions that motivate their active, intelligent, lasting participation (136). That said, design in policy would *"shift our focus from being problem-centred to being human-centred"* (Junginger 2014, 86), allowing us to move away from the reactive kind of problem-driven and solution-seeking-driven policy-making that neglects **making human experience the starting point of a policy quest**; instead considering the actual human experience as the point of departure in the quest for the "right" policy. In a way, one could paraphrase this by saying that the expectation on design for policy is to allow for a path away

from problem-centered policy that brings with it a more or less accidental impact on humanity, towards human-centered policy that entails an impact on policy problems. A core element remains the origin of the policy, thus where the quest for the "right" policy departs from: either a perceived problem or a human experience. It is exactly the latter, the switch from problem- or efficiency-centered to human-centered or impact-centered policymaking, that is of much interest to the underlying study. Maschi and Winhall (2014) illustrate that **design can enable people to interact in new ways, create more sustainable relationships and facilitate behavioral change**, thereby changing policy towards viewing people *"not as bundles of needs to be served but as potential assets in the system"* (249). This view underlines that users, through design, can both be the origin and the (co-)creators of - if not a final policy piece itself - at least policy input. The human impact centered design side to policymaking means a systemic use of design as focusing on what creates meaning for citizens - hence citizen-centeredness - as well as co-production.
Note, in this context, that the notion of citizen-centeredness in policy is a tight one: Not all policy is necessarily regulation for the citizen or citizen-facing; trade policy faces states or other nations; international law or international organization law is directed at fellow policymaking or government institutions themselves; even food, the street, or the sea is subject to labeling or norms or regulated; not to forget, of course, the countless policies that govern industries and its business entities. It is thus questionable, at least under current policy practices, how far reaching the integration of citizen views can be in policymaking, and whether we should not rather speak about "policy-user centeredness" or "policy-user co-creation", or at least see both - the tighter citizen-centeredness and more encapsulating policy user centeredness - as co-existing. Admittedly, citizens might have to be included in policy decisions as the ultimate "end users'' to any policy. Lastly, impact-centered policy making would replace the inward-looking or self-serving business model view that optimizes for efficiency, political hierarchy and authority, or legitimacy. Instead, it could replace the former with external-facing and needs-based views with the core aim to enhance value for citizens or, i.e. for those who are destined to "make use of a policy" under concern.

Finally, design in policy is said to **bring the capability of making abstract concepts or ideas - as policies are implied to be - tangible or "experiential".** While human- or user-centeredness can imply a passive role for the user when making policy or integrating it, design for policy addresses heavily the active role of the latter. Bason (2016) argues that design helps *"merge people and policies [...] enabled by the strong human (citizen) focus, but also by the integration of policy with tangible artefacts which can give physical expression to*

otherwise abstract ideas and concepts." (265). Boyko and Cooper (2014, 162) conclude: *"By engaging citizens in all the decision-making stages and using technology to visualize, record and analyze, citizens become part of the process of iterative testing, implementing and reviewing of ideas."* (162). Maschi and Winhall (2014, 249) embed the discussion in the broader design context: *"Design has long been employed to shape individual behaviours through our experience of spaces, interfaces and processes."* This helps integrate the ones who are concerned as policy (end) users into the process of fabricating the policies themselves. Maschi and Winhall imply a behavioral change character that active integration can bring to those involved in the process of making, be it citizens, businesses or policy makers themselves. Design focuses on integrating human experience from exposing policy to those who would make use of them. This implies looking at **making policy practical and scrutinizing the real-world value generated from the policy that is being designed.** Such a perspective may lead to different inputs for policy and, potentially, different outcomes of policy itself.

When talking about policy and value in the form of human experience, questions about the social good or society as such, and how design brings *social* value, become center stage. Rachel Cooper focuses on work that addresses social responsibility or sustainability, and thus long-term generation of value for society; Manzini concentrates on Social Innovation; and Bason proposes a path to bridging the gap between making policy and its impact on citizens. To date, service design has been front and center for the creation of social good, both in academia and in practice (Cooper and Junginger 2011; Meroni and Sangiorgi 2011; Kimbell 2011; Polaine 2012), far beyond design for policy. Bason (2016) hypothesizes that this is due to the adaptable nature of service design that can be made to fit many applications or sectors, private, public or NGO/civil society. He maintains: *"Policy, it can be argued, is almost uniquely a public sector enterprise."* (29). While it is true that design for policy has to date been less looked into as a vehicle to creating social value, which is why this thesis focuses on just that matter, policy is not just a public sector enterprise or has been in the past. We find policies at all levels, at product management and development within companies, as part of terms of use or conditions when using services, e.g., apps or other, and as codes of conduct in the third sector; and those corporate policies are, most of the time, derivatives of public policy or parts of it. Additionally, if we thought that policy was, even today, a public sector enterprise, we would not de facto have spoken about collaborative governance since the 60s/70s, participatory approaches in businesses since the 70s/80s or participatory design in design science since the beginning of the new century. While public

policy relies on democratic processes, votes in parliaments, assemblies or councils, and ratifications it is not being *made*, in the strict sense, by the public sector yet has since at least the existence of democratic societies with democratic institutions been an interplay between various actors, both at the level of providing input, vetting, and lobbying for interests, and - finally - at the level of helping to implement public policy in practice. The fact that policy pertains into a multi-actor sphere would only become more pronounced if we were to adopt a fully design-driven approach to policy making. It is yet not an entirely new perspective to adopt.

2.5.2. Design as governing through collaboration and engagement

Given the essentially collaborative or at least stakeholder-contributions driven nature of policy-making, it is important to discuss how design in policy and collaborative governance seem to approximate each other when it comes to the quest of creating value in policy-making: First, design in policy is transitioning more and more into the world of 'co', to collaboration, co-creation, and co-design as central features to design that emphasize the explicit involvement of users, partners, suppliers, and other stakeholders in the design process. This tendency is, in essence, discarding the notion of the heroic single designer (Sanders and Stappers 2014; Michlewski 2015). Secondly, variations such as participatory design and service design, which focus on (re)designing service processes from an end-user perspective, are in rapid growth (Bate and Robert 2007; Cooper and Junginger 2011; Bason 2016). In addition, design is increasingly used as *"a tool for experimental, open and collaborative"* making of policy (Bason 2016, 262). Designing collaboratively is said to **establish ownership and a sense of purpose** for those who are involved in the process of contributing to what is being designed, especially if they receive **an active role in that process and are taken seriously** (compare to Maschi's and Winhalls (2014) proposal to consider participants as an asset in the process of making; see previous section).

For such collaborative design processes in policy - i.e., where collectives make sense of a new policy proposal or problem - to have a chance to be successful, the processes require more than just 'facilitation' of actors who are supposed to own or find purpose behind such

processes. **The processes need supervising and caretaking more than before to establish alliances and allow for involvement of the wide assemblies of actors across diverse platforms and knowledge assets.** Bason calls that type of active care of engagement **'stewardship'** (Bason 2016, 265). Bentley (2014) clarifies further the essential role of individuals in that process, stating that the disciplines of policymaking must be geared towards **influencing interdependent systems without abandoning specific responsibilities for particular sets of outcomes.** Banerjee (2014) maintains that we need collaborative approaches that are cross-cutting in a fragmented world of domain knowledge: Modern society's increasingly distinct and siloed domains of organization and knowledge call for both, as he calls it, **'horizontal' and 'vertical' co-creation and co-design.** Finally, Bason (2016, 265) concludes that collaborative approaches to design can ensure ownership and motivation specifically when addressing exponentially growing challenges, which need to be met with **more rapid answers and actions than what is usually allowed by public sector processes of research and decision-making.** The call for policymakers as "choreographers of value" under design-based approaches to policy making seems to confirm itself. It extends the role of the policy manager as the passive mediator (see chapter one, critique on the public manager as administrator). Additionally, from the analysis of design in policy it becomes clear that collaboration means **having a clear role in and being responsible for production and results from policymaking outcomes.** It is, perhaps, the sense of ownership and responsibility that comes through the production with others that allows for the resolution of policy problems in the first place, no matter how wicked.

2.5.3. Limitation to design in policy: Outlook for design in policy in international governance contexts

One of the major limitations discussed in relation to design in policy are ideological differences between policy and the design disciplines themselves. The former would inhibit successful implementation of design in the making of policy as is. Bason (Bason 2016, 30–31) presents a reflection in which he juxtaposes guiding principles in both government and design, presenting them as fundamentally opposing or, at least, on other ends of the spectrum (see Table 4). E.g. what is 'rational' at the government end is classified 'emotional' in the design sphere; logic corresponds to intuition in design or government is about appearance ('elegance') more than action-oriented creation of impact. Related to the table

he expresses skepticism *"whether designers can ever become a respected part of the public sector, and recognized as partners with policymakers."* (31).

Table 4: Opposing cultures of making, how government and design think and do (Bason 2016, 31)

Government	Design
Analysis	Synthesis
Rational	Emotional
Logical	Intuitive
Deductive	Inductive
Solutions	Paradigms, platforms
'Thinking it through'	Rapid prototyping (think through doing)
Single disciplines (e.g. law, economics)	Multiple disciplines, T-shape
Elegance	Impact, value, diffusion

Questions arise as to whether design can be apt for, or the designer can be able to deal with, the complexities the governance and law domain brings. *"One could argue that the political, ideological and sometimes abstract nature of public policies make them unfit for design practices which are concerned with that which is attractive, functional and meaningful to people in practice. While the ability to give shape to abstract concepts and ideas is a core design skill, can designers come to terms with the sheer scale, interdependence and complexity of public problems?"* (Bason 2016, 31). I view an intriguing anomaly in the discussion of this limitation: Design is constantly being praised as the tool to help navigate increasing complexities. It is a popular argument used to legitimize the introduction of design in policy in the first place, made by design managers, policy innovators, or specialists, including Bason himself. Limitations seem not to lie in the functionality or aptitude of design as a method yet are being ascribed to the actor who is deploying design ("designers" coming "to terms") and to the policy idiosyncrasies, that the former might fail to navigate.

Additionally, be it through a cycle-based or linear policy model, little knowledge is available on how design helps making choices about whom policy should be made for, what impact it creates, and how those considerations play a role in policymaking by design today. Scholars suggest at least that design is, fundamentally, about creating impact and value, evident for example in Bason's connotation in the above-presented table. At the same time, though, the overwhelming majority of the quests on the role of design in policy to date are tied to the policy-making cycle, reflecting how design can be a fit as a part of this cycle (Bason 2016; Coletti 2013; Junginger 2016; Villa Alvarez, Auricchio, and Mortati 2020; Vaz and Prendeville 2019). It is true that one quest has been to push design in policy away from mere policy

implementation into the policy formulation stages such as agenda setting and problem definition. Sabine Junginger is at the forefront of that type of work (Junginger 2016). Such a view still limits design to its instrumental or tool function rather than allowing it to inquire into the manifold sides of design's potential, particularly the ability to elevate the value itself that policy can realize with it. Design for policy is currently discussed as a problem-solving method that enhances another problem-solving domain, namely policymaking, which leads to wonder whether design can reach beyond the making or implementing of policy and help policy more directly address value creation as part of its making. *"Rather than viewing design merely as an addition to the repertoire of policy tools, [...] design offers a different way for policymaking to be done*.", speculates Bason (2016, 28).

Finally, the quasi-totality of design in policy studies are tied to user-engagement and actor integration and its consequences for the policy-making process based on *local* communities, municipal/city levels or, in rarer cases, national contexts, e.g., government innovation teams or labs. Scholars have explored the nature of interactions between design and political institutions. These include: a series of interviews with senior level civil servants from the UK central government with exposure to design methods and techniques through interaction with the UK Policy Lab (Bailey and Lloyd 2016); Forrester and Body (2014) show how design approaches succeed in linking policy intent with on-the-ground professional practices in the field of vulnerable families in Canberra, Australia; Boyko and Cooper (2014) embed design at city level, using the case of a UK-based research project to map sustainable urban design decision-making. Amatullo and Herscovitch (2012) look into multidisciplinary design research and co-creation methods with end users and an NGO in access to water amongst urban slum dwellers in Chile and Peru. Jégou, Thévenet and Vincent (2013) focus on French regions, collaborating with regional authorities to experiment alternative design-led policy approaches. The collection of cases presented in Bason's *Design for Policy* (2016) include country-based cases from France, Denmark, and the United States or UK, Finland, the Netherlands, Australia, and Italy, which highlight how strongly our knowledge and insights of design for policy remain tied to exploring national and sub-national policy settings. With very few exceptions, comparatively little research has happened through case studies or in-depth involvement in design-led approaches in international policy-making contexts (Vaz and Prendeville 2019; Amatullo 2015), and on how design contributes to value from policy generated and issued at higher governance levels or in international and global policy-making contexts. The latter is the perspective adopted in this doctoral research, providing complementary insights to what is already known from other governance levels.

2.6. Gap of knowledge

With design practices in policy deployed yet not taken to full fruition yet, little understanding has been generated so far about how the core function of policy, namely creating value for the public and its constituents' needs, can be supported through design.

This thesis hence explores how design practice identifies and creates public value from policymaking in the context of international governance. The identified knowledge gap (resulting from the review of the literature streams) addresses how individual desires and needs, as (e-)valuations, are transferred through design into collectively owned value perceptions or experiences - i.e., the combined actor preference for the aggregate social condition (to build and extend Moore), and therefore public value. The former lies at the heart of public value and its identification and creation (see Figure 7 below).

2.6.1. Summary and underlying assumptions

All literature streams reviewed point to either a gap or inconclusive knowledge in the realm of capturing individual value and transforming it into what's valuable for the collective (see Table 5 as follows), which emanates hence as a key element to investigate and interrogate when asking how design practice can identify and support public value creation.

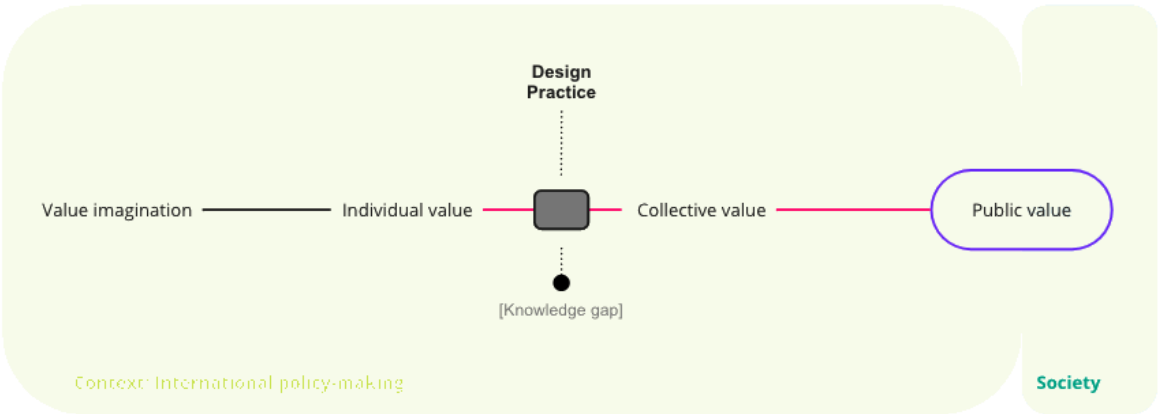


Figure 7: Knowledge gap. Design practice as supporting the strategic function of policymaking, namely identification and creation of public value from international policymaking

Such a stance acknowledges design as inherently political (as e.g., authors such as Buchanan, Latour, or Dewey argue) and would postulate design as an ideal instrument on which public policy should build in order to create value for society. It also suggests, as argued in the literature review section (see chapter 2), based on Simon, that design is less about the proclaimed ideal of enabling 'creativity' than about facilitating and creating the conditions to overcome bounded rationalities and, with them, in the context of public value, subject-bound (e-)valuations, i.e., actor desires, needs, preferences. Understanding about the actors, the design process, and value products is fundamental.

Contrary to more widely spread research in the field that looks at design as a tool, method, or instrument in established mechanisms of policy craft (notably the policy-making cycle), the underlying analysis aims to understand how design can support public policy in its strategic function, as is increasingly sought for in recent research and policy practice: namely the identification and subsequent creation of value for the public (public value). This approach proposes to complement existing research about the value from design practice at the policy operations level, that has introduced and confirmed design as a valuable sub-element in policy-making or public service delivery, where most of the research in design for policy sits to date. Also, the overwhelming body of literature and analysis of design in policy has taken place at the subnational or local (community) level (see section 2.4.3). This research, looking into cases drawn from the international policy-making and global governance arena, aims to complement and expand the existing knowledge about design in police while, at the same time, focusing on the strategic aspects of policymaking.

Table 5: Overview of research phenomenon and assumptions: main observation, literature analyzed, derived gaps, answers thought for, and research questions with objectives

Observed phenomenon				
• Policy sector turns to purposeful policymaking with the aim to create meaning for policy recipients • Multiple actors/ organizations are called upon working collaboratively towards a joint end goal or vision; imagination and vision-setting are key in this context • Limits to envisioning desired society lie with: ○ Roles historically ascribed to public actors (e.g., public sector is not entrepreneurial) ○ A plethora of (complex) problems to be solved by public policy (focus on quick fixes and solutionism) ○ Efficiency considerations and inward-looking KPIs (legacies from 1990s' New Public Management) prevail over focus on policy recipient (e.g., society and its participants; citizens, companies, etc.) desires/needs				
World view in theory				
Literature analyzed	*I.(a) Policy and public governance*	*I.(b) Philosophical and psychological stance*	*II. Design*	*III. Design for policy*
Key insights derived per literature stream	Policy needs to be collaboratively made, thus be co-creative, to generate value - Public value is a collectively expressed value: *"the combined preferences of citizens for an aggregate social condition."* (Moore 1995, p. 44) - *"Policy-making can be thought of as a strategy for resolving societal problems by using institutions; simultaneously policy-making is also a process for modifying those same institutions for attaining these goals."* (Knill and Tosun 2008, p.29) The decision about what kind of public value - or mission - to follow needs to be a collaborative one	Public value creation is the experience of a collective that emerges out of an individual and/or societal interaction with organizations *"in some way"* (Meynhardt 2015) Value is profoundly relational and requires externalization through discourse: - Value is the result of a subject-object relationship	Design effectively solves problems by optimizing for possibilities to overcome bounded rationalities - Design brings together actors to overcome bounded realities and experiences Value from design is, in today's networked, multi-actor world relational, i.e., established by	Design in policy represents design vastly as a tool, method, or instrument Majority of the inquiries are tied to the policy-making cycle, reflecting how design can fit in as a part of this very cycle (Villa Alvarez et al., 2020; Junginger, 2017; Bason, 2016; Coletti, 2013) Predominant focus to date on design as an efficiency-related and inward-looking assistant - Less focus of design on parameters like e.g. integration of recipient voices, needs and desires, into policy process Latest findings point out that design in policy might make policy more experiential - I.e., tangible for the association of subject(s') (e-)valuations

	- Not just the public sector commits capabilities and authority; value originates in a journey, an assembly of actors who invest assets and resources in and feel responsible for the outcome, i.e., self-legitimize and -authorize Public value management can be expressed as a triangle, composed of *legitimacy*, *operational capabilities*, and *public value* (e.g. Moore 1995) with the latter being rooted in citizen desires and needs - The public manager has a leadership/ visionary role (value-seeking imagination) in providing value propositions/ envisaging what is valuable Public value management gains traction in networked, multi-actor worlds (Stoker 2006) - In a multi-actor-based, global governance world, scientists expect multiple value triangles (i.e. legitimacies, capabilities, …) to evolve and persist, related to given actor (Bryson et al. 2017) The international policy context, its proposals and institutions define at global scale (i) what public value means, i.e. how policy ideas arise and are promoted and (ii) implemented (ideas of convergence, diffusion, and transfer; see e.g. Knill and Tosun 2008) - Vertical and horizontal collaboration hierarchies define implementation or incorporation of policy - Also cognitive and normative (e-)valuations define policy visions and value associations	- Value is "subject-bound", i.e., the (e-)valuation by a subject (of an object) - Value becomes objective when (e-)valuations are shared - Externalizing value requires constant revision in discursive practices	interactions - A core contribution of design interventions in public policy is to constitute, assist, and keep up production of interpersonal encounters (see also Cipolla and Manzini 2011, 2009)	Reflections on how design offers *"a different way"* (Bason 2016: 28) to policymaking as such are recent and only emerging

Knowledge gaps identified (per literature stream)				
(Sub-)/Per literature stream	Very limited account and references as to how public value - rooted in actors' desires, legitimacy, operational capacity - is assembled in collaborative settings, particularly as to how public value originates in and emanates from individual actors' desires and their cognitive and normative (e-)valuations	No to limited account as to how collective value emerges out of individual (e-)valuations, or how "bound" (e-)valuations (inherent to individual(s)) are externalized to become valuable collectively	No specific guidance as to how relations get established and maintained; or how interactions are being managed for needs (subjective (e-)valuations) to be expressed and fulfilled	Inconclusive guidance as to how policy, through design, can collect value associations and contribute to creating value for policy recipients (beyond enriching existing policy-making processes, e.g. in the policy-making cycle)
Answers sought for				
Per identified knowledge gaps per literature stream	• Meaning of public value management in multi-actor, co-creative (international) policymaking through design • Transformation of legitimacy, capabilities, and individual value associations (= public value or public value triangle) through design • Linkage between individual actors' preferences and combined preference as public value	• Design practice as the process through which collective value can emerge out of individual (e-)valuations • Externalization and reassemblage of subjective, "bounded value" understandings through design	• Generation and continuation of actor relations through design • Orchestration of interactions through design practice: tools or experiences deployed, for subjects to express bounded rationalities, i.e., bounded (e-)valuations • Extent to which design can create interactions that influence the fulfillment or change of individual needs	• Creation of tangible moments or perceived experiences through design that enable association and expression of subject-bound (e-)valuations • Mechanism of design to enable value identification and creation in policy

Main knowledge gap (based on analysis of literature streams)
Public value creation means to allow individual, “bounded” desires or needs, thus (e-)valuations, to be associated, externalized, and debated as a collective value or at least an individual actor’s perception of the collective value. How design practice and thinking support identifying and creating (generating) such public value - and hence complement policy’s most strategic core function - is not known.
Main Research Question
What value does ‘design’ bring in to support the identification and creation of ‘public value’ in the context of ‘international policy’?
Objectives
1. Understand the state-of-the-art knowledge and the relevance of design in creating public value in international policy context 2. Investigate the design practice in the international policy-making context to understand its relevance 3. Conduct a participatory design project in international policy to reveal its contribution to public value generation

2.6.2. Research aims, question, and objectives

This research aims at investigating the role of design practice in supporting public value generation from policymaking in international governance contexts. The investigated phenomenon is a timely one (see introductory chapter): Calls for a world in which public policy reclaims enabling purpose, is mission-driven, and creates direction and meaning for society are on the rise. Both vision-setting, i.e., imagination, and collaboration and co-creation across actors are mentioned as key in this context. The transition to such strategic reorientation appears to be complicated by the roles historically ascribed to actors (e.g., public vs private), in which the public sector is not necessarily perceived as entrepreneurial. In addition, the plethora of (wicked, complex) problems to be solved by policy operations (i.e., solutionism) might limit the focus on the strategic activity of value creation. Finally, the focus on efficiency considerations and other inward-looking KPIs, a legacy of the New Public Management paradigm in the 90s, seems of little support in instilling the society- and needs-focused orientation as is proposed through a value- (or mission-) driven policy model of the future.

The **research gap** deduced from reviewing the above-presented literature streams is as follows: Public value generation means to allow individual, "bounded" desires or needs, thus (e-)valuations, to be externalized, associated, and debated as a collective value or at least an individual actor's perception of the collective value. However, how design practice and thinking support identifying and creating that value - and hence complement policy's most strategic core function - is not yet explicitly explored.

The **research question** defined to address the knowledge gap asks: *What value does 'design' bring to support the identification and creation of 'public value' in the context of 'international policy'?* The attempt to answer this question is built around three main objectives, out of which one pertains to literature and is theory-related, and two are empirical.

Objective 1 out of 3: Literature and theory-related

Objective 1 is literature-related and serves to **understand the state-of-the-art knowledge and the relevance of design in creating public value in the international policy context**, as above-presented. As illustrated by the introductory paragraphs and visualized in the table

above, three main bodies of literature from the policy and design realm are investigated: First, policy and public governance, including philosophical and psychological accounts of value identification and creation that pertain to the former; second, design and, thirdly, the dedicated design discipline in policy, design for policy. Each of the bodies establishes a gap that has led into looking into the respective complementary and more concrete literature stream (see Table 5 further up):

From policy and governance emerges that public value is rooted in collaborative approaches, crafted through and across many actors. *How* public (collective) value is rooted in and emanates from the individual actors' desires is left unaddressed in the pertinent and screened bodies of literature. The philosophical account helped assess that value is fundamentally understood as a relational - namely a subject-object - interplay, but how subjective (e)valuations can be externalized to create a value that is collectively owned in (a given) public is unclear. Design proposes itself as a process that is actor-based and relational, i.e. establishing interactions in communities or public spheres (see section 2.3.3). The analyzed literature implies that design facilitates overcoming bounded rationalities or subject-bound (e-)valuations, i.e. perceptions of needs or desires. The question remains how exactly relations get established or maintained and interactions and (e-)valuations orchestrated, to extract public value. Finally, the (relatively recent dedicated) design for policy literature does not yet provide an explicit account of design and its strategic value creation function, that would ask how it collects and identifies individual value associations and contributes to value creation amongst policy recipients. With the help of this journey of iterative inquiry into state-of-the-art knowledge the main knowledge gap was uncovered (as illustrated in Figure 7).

A specialty about this approach to advance the inquiry of design in the policy realm is that it examines the strategic role of policy from the angle of public value creation, and thus reinterprets it as a need- rather than necessarily problem-based view. - Policy is said to be a *"strategy for resolving societal problems"* (see Knill and Tosun 2008, and as cited above in 2.3.2 Policymaking in the international governance context); design is a process that aims to devise courses of action with a particular purpose in mind that is grounded in a need (Eames, Simon); the purpose can but need not be a solutionist one, limited to solve a problem. Policy, through design, can emphasize a vision-driven or imaginary approach about an ideal course of/for society and its needs. Such a view emphasizes that needs, desires, or subject-driven (-bound) values can be at the origin of policy creation rather than limiting policy to problem-solving.

Objectives 2 and 3 - Empirical and case study-related

The adopted empirical inquiry and investigation into design proposes itself as a holistic one: Scholars have emphasized that, in order to create knowledge about design, one should look into the ACTORS (the designer, design team or organization), but also the OBJECT, i.e. the problem, and the CONTEXT (incl. its impact on the design activity) in which the design takes place (Dorst 2008). Cross (1999) proposes to look into the PEOPLE (i.e. actors), but also the PROCESS and the PRODUCT of design. The adopted empirical research design builds upon these five blocks, inquiring about the *problem*, *process*, *actors*, *product*, and *context* of design. Selected studies out of the international governance realm are investigated as the *context*. The international policy-making and global governance context is inherently geared towards long-term vision setting and societal queries. This allows us to focus on the strategic value creation the research is geared to investigate into. Furthermore, the *problems* are unpacked, i.e. the issues that design is supposed to address; in other words: motivations to introduce design in the given international policy context. To explore what it means to design in international and thus strategic policy-making realms, related to (a) societal problem(s) - in this case technology/AI governance - the design *processes* deployed are investigated. The inquiry further sheds a light on *actors* as well as actor configurations, asking who designs (what institutions and players) and who comes together (participants) when design is at play in global governance contexts, notably in global tech and inclusion/participatory areas. Finally, the *product* of design is sought to be unpacked, i.e. what design seeks to produce or contribute with policy in the international governance context, which speaks to the essence of the research inquiry, investigating how design practice supports the identification and creation of public value in the international policy-making context.

To link the five blocks more concretely to the research design's empirical objectives:

Objective 2 attempts to **understand how the international policy-making context deploys design practice(s)**. The motivations to introduce design in the context - i.e. the hopes and expectations for utilizing design are explored. It is asked who designs when design practice or design thinking approaches are deployed in the international policy context and how actors are brought to the table and their interactions established and guided. It is interrogated what it means to design, to adopt design practice, or to design-think in the international policy-context. => *PROBLEM (OBJECTIVE), PROCESS, PEOPLE (ACTORS)*

Objective 3 is to **conduct a participatory design in policy project to reveal the practice of design in contributing to collective value in international policy**. This objective focuses on what impact is produced for those engaged in the design process, how their expectations are (or are not) satisfied, and what experiences the participants and involved actors make (perceive they make) through the design process. => *PROCESS & PRODUCT*

Note: The CONTEXT, given the case studies chosen, is naturally the international policymaking and governance context, and touches both empirical objectives 2 and 3.

3. Methodology

This methodology section explains how the research question and objectives 1-3 are addressed. First, a foundation of design research within the policy-making realm is established (section 3.1). The section then describes the investigation into public value from policymaking in international governance through three cases: two preliminary, interview-based cases, and one main, design-practice-based case (section 3.2). The second half of the chapter introduces the methods used (case study and action research) and provides an overview of the three settings: the EU Commission EU Policy Lab and World Economic Forum C4IR as preliminary cases, and an anonymized participatory design practice project at a leading global technology company as case III (section 3.4). The section concludes with insights into data management in the thesis.

3.1. Design research foundations and link with policy

This investigation in the policy domain borrows from design research in product design: *"What I believe has changed in our understanding of the problem of design knowledge is greater recognition of the extent to which products are situated in the lives of individuals and in society and culture"* (Buchanan 2001a, 14). Dorst (2008) emphasizes, too, that design research has had its focus in describing the process to product design while ignoring to shed

a light on the context that the subjects or the designer operate in. Buchanan calls for more attention to *"understand how designers may move into other fields for productive work and then return with results that bear on the problems of design practice"* (2001, 17). The former establishes the point of entry for the underlying research approach: It situates design and its productive activities in the various investigated policy contexts and gauges results of the practice and the problems it tackles within these. It interrogates the interplay between design and the particular policy context in which it appears.

Both policy and design are evolving practices and require interpretation. *"[Q]ualitative researchers deploy a wide range of interconnected interpretive practices, hoping always to get a better understanding of the subject matter at hand. [...E]ach practice makes the world visible in a different way. Hence, there is frequently a commitment to using more than one interpretive practice in any study."* (Denzin and Lincoln 2018, 4; Sanghera 2007). Scholars propose to replace research with qualitative inquiry (Dimitriadis 2016), whereby inquiry *"implies an open-endedness, uncertainty, ambiguity, praxis, pedagogies of liberation, freedom, resistance."* (Denzin and Lincoln 2018, 44). The latter inquiry, simultaneously never fully accepting to find absolute certainty, is the most apt to follow in the selected research settings. Both the practice of design and, most importantly, the organizations and policy contexts the design practice unfolds in, remain ever-changing phenomena and evolving. The organizations and contexts are wide and ample categories to look at; they cannot be expected to follow one clearcut design reality or one only deterministic assessment. Given these underlying features, the most accurate procedure is to describe and inquire, until a satisfying stage of an insight that turns into a proposition or a told story is obtained.

A **generative, performative lens of research through design** *across* the case studies is adopted: Research through design resonates well considering the necessary evolutionary character of the inquiry, where design in policy has emerged and is emerging over time. *"Design, and research through design, is generative. Rather than making statements about what is, design is concerned with creating what might be, and [...] on making the 'right thing'"* (Gaver 2012, 940). The purpose of research through design[30] is to understand the conditions

[30] Literature refers to three categories of design research that are reflected in the selection of my research objectives: research for design; research through design; and research about (in/into) design (Archer 1995; Frayling 1993; Frankel and Racine 2010; Friedman 2000). The debates about the three since the 90s, albeit not generally prompting unity amongst scholars (Jonas 2007), have come to delineate differences in the epistemological paradigm the approaches follow. They propose three differing perspectives for design - its purpose or meaning - in design inquiry. Research 'into' (about) design comprises the investigation of design processes and activities of design as isolated objects of

and to systematize the processes for replicating design practice in the future. Jonas considers research through design the only genuine research paradigm because it is here that new knowledge is created through an action-reflection approach (2007). The emphasis is on the research objective of creating design knowledge, not only the final project solution (Frankel and Racine 2010), also referred to as project-grounded research (Findeli 1995). Findeli and Bousbaci (2005) suggest that research through design combines research 'for' and 'about' design in a situated manner. Friedman concludes: *"Design is both a making discipline and an integrated frame of reflection and inquiry. This means that design inquiry seeks explanations as well as immediate results"* (2000, 52). It is the design process in relation to its context that generates new knowledge in research through design, not purely the observation of an objectified, isolated, definitive solution (a design artifact). Research through design thus proposes to turn its focus to a design that has the potential to create change, to be productive at the same time:

> *"The unique value of this approach [research through design] appears to be the focus on a future state and on a preferred state with respect to a wicked problem. [...] In a sense, this approach allows researchers to become active constructors of possible and desirable futures."* (Forlizzi, Zimmerman, and Stolterman 2009, 2895)

This research also explicitly acknowledges and considers that decisions about public policy are decisions about the *idea of* the or at least 'a' society of tomorrow (Stone 2011) - thus are future-oriented - thereby inherently generated by and through actors and human beings, and their value attributions.

An additional purpose of the methodological approach is 'to give a voice to' human beings that make and use policy in their situated socio-cultural environment through design. By connecting design in policy more expressly to the actors that deploy and hope to profit from it, we can understand the value design in policy holds from the different points of view of

inquiry where a research question *"is [...] restricted to the product on which research is being conducted"* (Schneider 2007). Findeli (1998) suggested that research about design separated design theory from design practice. Research 'for' design generates knowledge by reflecting the design practice, its materials, technology and applied processes, focusing on learning about the applied design practice. Research 'through' design combines the two perspectives, suggesting both a systematic and self-reflective element of research with a clear purpose of building knowledge beyond the practice of design. Research through design brings together objectivity (of research about/into design) as well as the reflective nature of doing design (ibid).

human beings, uncovering 'new features and properties' that to date are only 'partially understood':

"With the move away from visual symbols and things as the focus of attention, designers and design theorists have tried to understand products from the inside—not physically inside, but inside the experience of the human beings that make and use them in situated social and cultural environments." [...] Only a moment is required to realize that from an interior perspective of the experience of human beings, products reveal many new features and properties that are, at present, only partly and inadequately understood." [...] (Buchanan 2001, 13)

In fact, design research and design practice are increasingly evolving *as "new design theories and new theories of design"* (Forlizzi, Zimmerman, and Stolterman 2009, 2889) and move away from studying the product - the design itself - the material and the visual, to the experience and motivations of human beings. Related to the knowledge gap and across all case studies it remains unclear how different perspectives of the different actors involved in international policy-making contexts and design initiatives define value that is to be created, whether their perspectives are diverging or convergent; how choices are being made about what value would precede (if any) over another and how the resulting impact of the given design-led policy-initiative and final public policy would look like. There also remains doubt about whether a desired public value generated by public policy would be equalizing the sum of individual actor's ideal values: Can one just sum up individual values, or negotiate them, to then legitimately claim that we are creating value for the public? What difference does design practice make here, if any?

3.1.1. Inspiration from adjacent fields: ethnography

Karen Ho's research approach in 'Ethnography of Wallstreet' remains an additional major methodological inspiration for the underlying qualitative, ethnographic approach. The scientist's book is based on her doctoral thesis, in which Ho adopts an ethnographic approach to systematically analyze the main actors (in the financial sector). Grounded in this actor-based view she sought to *"unpack markets ethnographically from the ground up"* to explore the functioning and dynamics of the financial markets *"and in so doing, counter*

social-scientific tendencies to approach markets as undecipherable, abstract, totalizing, and all-powerful." (Ho 2009). Ho ties interview-based insights to own hands-on observations that she makes as an intern at major investment banks next to her PhD program. Being part of the system, she creates a more intimate understanding of the dynamics she seeks to investigate yet also develops strong ties with the actors. She manages to craft knowledge from within. Her own technical exposure and professionalism in the field enable her to more intuitively empathize and understand what the actors and dynamics she analyzes signify. At the same time, snowballing and establishing a presence and reputation across Wall Street she matches individual and actor-based experiences and insights with the wider institutional context and the guiding rationale the former are embedded in.

In design, ethnography became a popular tool[31] given that it opened a more reliable, holistic, and complementary perspective on usability and the actual use of a given product[32], whereby the user is the central focus of designers' professional attention: identifying and meeting the user's needs and wants is the central mission of designers. "*Ethnography appeals to designers because it provides a window onto the ways consumers interact with products in their everyday lives.*" (Wasson 2000, 377). Ethnography promised to reveal a whole new dimension of 'the user': *"It investigates, not just what consumers say they do, but what they actually do"* (ibid, 378). According to the naturalistic (as opposed to positivist) approach to ethnographic research, *"in order to understand people's behaviour we must use an approach that gives us access to the meanings that guide that behaviour."* As participant observers we can learn the culture or subculture so that we can *"come to interpret the world in the same way as they"* (Van Maanen 2011, 7). This analysis is interested in both the consumers or users of policy, the "policy users", and those who make use of design to make policy, the policy officers, decision-makers of policy, and proponents of policy directions, usually referred to as "policy makers". It wants to understand how design is valuable to actors as well as how

[31] Predecessors before ethnography's arrival in the design field were cognitive psychology, in particular human factors research (Norman 1988) and market research (e.g., large scale statistical approaches or focus groups). See Wasson 2000.

[32] Note that, in design, ethnography is focused on practice and practice-relevant interpretation, rather than sophisticated data analyses and description as one would encounter it in a full anthropological approach (over an applied one). *"Ethnography" has a narrower and somewhat different meaning in the field of design than it does for most anthropologists. [...] research is usually done more quickly, and given less theoretical contextualization, than on academic projects."* (Wasson 2000, 382). The goal of data analysis is already to develop a solution: *"to develop a model that both interpreted the ethnographic materials that had been collected and envisioned a solution for the client. The model offered a coherent narrative about the world of user-product interactions: how a product was incorporated into consumers' daily routines and what symbolic meanings it held for them."* (ibid, 383-384). This mindset of design ethnography is deployed in order to think and stay outcome- and impact-driven: The practice-driven focus is an amalgam of *what is* and *what if.*

actors make sense of design so that it helps them create value. The design discipline is opened to another dimension of the user, namely the one who deploys design, yet who does not necessarily feel like a designer or identify as a designer in her professional description.

3.2. Research strategy

Central objective of the study is to explore how design helps identify and create public value, examining it on the example of policymaking in the international governance realm. The study adopts a case-based approach, analyzing three initiatives in the international public policy domain that deploy design approaches in policy (*"design-driven public policy initiatives"*).[33] The three are investigated mainly based on *interviews* for cases I and II and based on own design *practice* for case III. Research through design results as the main analysis approach: Cases I + II allowed to learn from deployed design practices for the dedicated, own practice in case III; case III research is complemented with action research. The three analyzed policy-making institutions are globally renowned and represent established international policy-making contexts:

(I) the EU Commission's *EU Policy Lab:* a public sector policy-making setting that deploys design-led approaches to serve EU policymaking

(II) the World Economic Forum's *Centre for the 4th Industrial Revolution* (C4IR): a traditionally public-private sector convener in international policymaking

(III) a worldwide leading tech company's *global design-led approach in governance of emerging technologies*: initiated by the private sector, following experimental and participatory governance

See a description of the three in Table 6.

[33] Yin (2018, 46) finds that a survey's ability to investigate context is extremely limited (e.g., struggle to limit number of questions). One design and policy scholar conducted an ethnographic study in the international policy context in her doctoral thesis, at UNICEF (Amatullo 2015), though looking at it from a social innovation rather than policy standpoint. Another design practitioner and researcher in policy studies the international context through interviews (Vaz-Canosa 2020). His work is, however, not exclusive to the international context but e.g., surveying thirty government labs and their design work at a variety of governance levels (Vaz and Prendeville 2019).

As the empirical objectives 2 and 3 (see chapter 1 for a concise overview on research aims and objectives) long for different types of answers, different types of data are collected, in line with what is most apt to provide sensible insights, leading to a mix of different methods:

In the **interview-based, preliminary case studies numbers I + II (objective 2)** the researcher is in affiliate roles (as a design practitioner or researcher), rather limited to observer stances and with only slight practitioner responsibilities assigned in the organizational context. In these contexts, the researcher collected interviews and documents, and to a lesser extent field notes (where recording an interview was not possible), to help explore the design practices deployed and their perceived relevance.

In the **practice-based, main case study number III (objective 3)** the researcher is in the lead designer role crafting and implementing the design practice for the intended purpose. She collected the observations and supporting material about her own design practice and asked for interviews and surveys from affiliates (participants, partners, recipients of outcomes, etc.) to collect the views and opinions about the led practice (and hence the value ascribed).

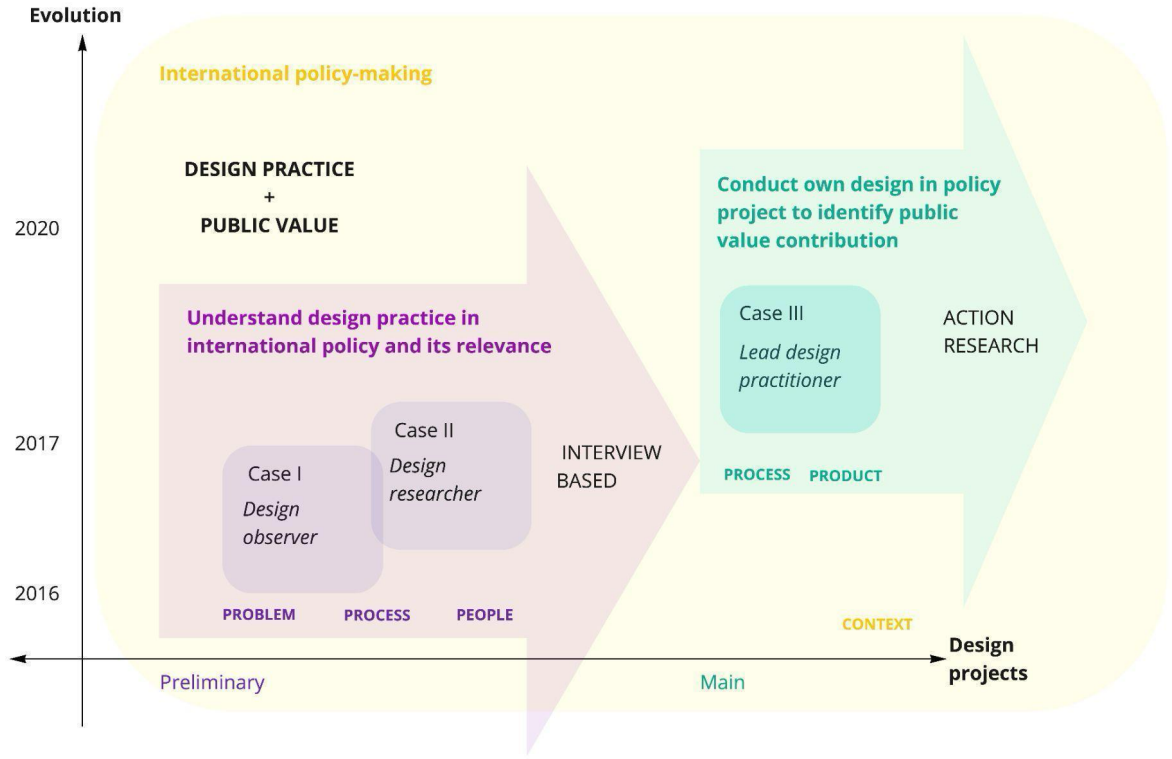


Figure 8: Evolutionary case study research with main interrogations and focus blocks

It is important to underline that the adopted approach and overall research are not destined to be comparing the different international policy-making arenas' capacities in producing policies (through design). The purpose of the research is not to make a judgment about what type of policy-making host or practice might be better suited to create public value. Rather, it tries to showcase the value that design practice can bring, based on insights across highly esteemed and established global policy actors in the international governance realm.

3.2.1. Case study design and evolution of the empirical inquiry

When I first set out to do a doctorate in the field as of 2015/2016, design had just been on the rise. - In fact, empirical research on design in international policy contexts is limited until today (see 2.4 Design in policy). - I had not yet been an experienced design practitioner back then but was working in policy from 2014 to 2015 at the EU Commission. Inquiring about, expressing my interest in, and debating the potential of design in international policy in the organization (EU Commission) and its ecosystem, I had been made aware of and subsequently gradually introduced to all my cases. Through my first two case studies,

referred to as "preliminary cases", I explore research objective 2; my main case helps investigate objective 3 and builds upon the preliminary two. – For a shortlist on potential cases I could have investigated, including evaluation for research fit, consult Appendix A, Table A1.

3.2.1.1. Cases I + II: preliminary, interview-based

My inquiry started by first exposing myself to more knowledge generation about what design in international policy was and how it was deployed. The **EU Policy Lab** ended up becoming my first site to study the need (problem) to design in the international policy realm and the design process within it, in 2016 and 2017. It ended up becoming the first out of two preliminary cases helping me learn about design in policy and enhancing my practitioner skills through observation.

Table 6: Overview of the three selected case settings

Organization and lab	**1. EU Commission JRC *EU Policy Lab***	**2. World Economic Forum *Centre for the 4th Industrial Revolution (C4IR)*** [34]	**3. Globally leading tech company *Global design-led governance program****
Researcher involvement	Participatory observer (affiliate)	Participatory practitioner (affiliate)	Lead design practitioner (employee)
Research objectives covered	*Objective 2* Analysis focus on *problem*, *actors*, *practice* of design		*Objective 3* Focus on *practice* with inquiry about its *product*
Prime focus of data gathered	Interviews	Interviews	Design practice and its receipt
Website	https://blogs.ec.europa.eu/eupolicylab/	https://www.weforum.org/centre-for-the-fourth-industrial-revolution	Anonymized, N/A

[34] Both EU Policy Lab and Forum C4IR participatory research has been undertaken under supervision at Technical University Munich, from 2016-2018

Founding year	2015	2017	2020
Location	Brussels	San Francisco	Glocal (global initiative with local adaptation)
Host institution	Public sector	Public-private mixed	Private sector
Governance level	Supranational	International	Global
Mission of the design-led policy initiative	*"Collaborate and experiment for innovative policy"*	*"Maximize the benefits of science and technology for society"; "Prosperity through Inclusion"*	*Bridge technology and policy innovation by experimental governance [paraphrased by researcher]*
Global governance impact	Yes	Yes	Yes
Main interest areas	Provide EU-based policy innovation and new design instruments to policymakers	Prototype and scale 4th industrial revolution technologies in line with international regulation	Co-create and test AI governance; prototype and sandbox policy around new and emerging technologies, such as AI
Approach	Design (research) based, with foresight, behavioral insights, and participatory approaches	Engagement-based (in fora or workshops) with prototyping and human-centered design focus	Product and service design; user research and participatory design

*Anonymized

My methodological approach factors in that *"The research activity related to design is exploratory and is both a way of inquiring and a way of producing new knowledge"* (Frankel

and Racine 2010, 3); see also section 3.1. The initial exposure at the EU Policy Lab enabled comprehension about what design and policy meant in practice. I learnt that what was termed public policy was by no means a purely public sector action or task, but an effort of many organisms - private and public, or civil society, and academia - exchanging information.

This insight drove me to study a policy environment with explicit focus on bringing multiple actors together through design. Cross' seminal *Designerly ways of knowing* (Cross 1982) emphasizes that design emerges from context and needs to be analyzed in that context to see what it solves or can add value to. I learnt about a **World Economic Forum initiative, the Centre for the 4th Industrial Revolution (C4IR)**, that aimed at human-centricity through design approaches in emerging tech and its policymaking. The Forum is, traditionally, a convenor of multiple organizations and a fundamentally multi-actor policy-shaping organism. The former made the Forum the ideal context to pursue in my research inquiry, which led me towards studying actor relationships; the Forum hence became the **second preliminary case** to my research, which helped me double down on objective 2.

3.2.1.2. Case III: main, practice-based

Limited to either observing or activity-accompanying and -researching roles in the first two preparatory studies, I ended up, a couple of years later, in a position where I would be able to bring in design practice actively myself and let design come to life in policy behind a novel program launched and supported by a globally leading tech company (anonymized). I was able to make sense of policy and tech realities through design and was able to address society's big questions through design. Arriving towards this setting with the previous insights collected and theoretical framing in mind, I named this my **main case**, covering **objective 3**, in which my goal is to no longer to just understand the *process* to design, *problems* and motivations to design, or the *people (actors)* who designed, and their interactions, in the international policy-making context. I aimed to understand, in particular, the *product* from design practice, thus the experiences or perceptions of value that design practice in the international policy context created according to the involved actors, which constitutes the core interest of my research inquiry.

For a detailed description of all three research settings, beyond my evolutionary case selection approach, see the dedicated section 3.4.

3.2.2. International policy context and researcher exposure

I have chosen to investigate policy in the international governance context for four main reasons. First of all, I assume that to be able to investigate the role of design in contributing to policy's strategic function, i.e. vision-setting and public value definition at scale in society, it is essential to look into the international policymaking and governance arena. International policy proposals and institutions can be expected to contribute with great relevance and at scale to what public value means: They shape how policy ideas are brought into the world and become meaningful globally; they promote implementation models of policy proposals. Scholars have presented evidence about the former from social policy or climate and energy policy realms at international scale (see literature review section 2.3.2).

Additionally, and based on the former, vertical collaboration (where implementation of policy through multiple diverse government layers is required) next to horizontal collaboration (one government layer) enlarge the portfolio of not just the number of actors but especially *kinds* of actors and actor hierarchies that are required to play a role and take ownership for policy proposals and their implementation in international contexts.

Thirdly, what we know about design for policy today has not necessarily been investigated in international but principally national, municipal, or community level governance settings (see 2.4 Design in policy and 2.4.3 Limitations to design in policy). The rationale I adopt is thus to put design in the most relevant while at the same time most "extreme" conditions, to interrogate whether and how it can contribute to creating public value: namely into a heterogeneous multi-actor setting, that tackles society's strategic questions by nature, and where understanding about desired impact grounded in individual needs - the "policy user" or "recipient" - is harder to capture, given the verticality and range of actors and organizations at play.

Finally, I attempt to expand existing knowledge of design through a rich trajectory, networks, and exposure in the global governance realm: Such realms will, to the vast societal and citizen majority, for which policy designs and who legitimize policy in the first place, remain forever

inaccessible, appear impersonal or remain mysterious, abstract organisms, never fully to be grasped.[35] The latter holds true despite the fact that exactly those institutional contexts, their mechanisms and the people who have access to them and work in them have decisions to make about the societal trajectory and wellbeing in society, at individual level and at scale.

Table 7: Overview of research objectives, its units of analysis and observation and methods, following the defined research design by design context, problem, process, people and product

Research question
What value does 'design' bring to support the identification and creation of 'public value' in the context of international policy?
Objective 1 [Theory-related]
Understand the state-of-the-art knowledge and the relevance of design for public value from international policymaking
THE CONTEXT International policymaking
The level to look at best to stress-test how design practice identifies and creates public value, as international policymaking by nature: - Envisions and addresses the most strategic policy questions and overarching societal needs that underlie public value: International institutions play an empirically proven and significant role in the policy paths that are envisaged at scale globally and, with that, the idea and vision generation about how societal problems should be addressed. - Effective policies in international policy contexts require a critical multitude of organizations and individuals who collaborate and deliberate across vertical and horizontal hierarchies, for policy to be actionable and effective in satisfying societal needs. - The international policy context is traditionally farer removed from citizens and society as policy end user, and thus their (e-)valuations and needs.
Objective 2 [Cases I + II]
[Preparatory] Understand the design practice in international policy and its relevance
THE PROBLEM - THE PROCESS - THE PEOPLE

[35] In *"Making Work Visible"* Suchman (1995) introduces the idea about "*how people work is one of the best kept secrets in America"*. This view speaks to my own analysis: Policy processes are as much of a black box as the ones Suchman referred to in her work in the 80s/90s at the Palo Alto Research Center (Xerox PARC). To paraphrase Suchman and apply the rationale in the context of my research: *"how international policy-making works (designs) is one of the best kept secrets in the world."*

EU Policy Lab EU Commission 2016-2017	*World Economic Forum* Centre for the 4th Industrial Revolution 2017-2018
- Understand the need for and what design and its practice looks like in the international policy context - Understand actors and design's role in assembling and orchestrating interactions and perspectives in the international policy context	
Units of analysis	
- What are the hopes for design practice and thinking in international policy, i.e., why is it needed? - What is design practice and thinking in international policy? - What is the locus of design, i.e. who facilitates international policy through design? - What actors are made to co-create and interact through design and why (i.e. constituted public sphere)? - How does design surface and externalize actor perspectives?	
Units of observation	**Methods**
Design projects led: process descriptions, tools, and actors involved	Interviews, document analysis, participant observation
Design team in host organization: team's self-understanding and legitimacy; served clients, assigned resources and capabilities	Interviews, participant observation, document analysis
Involved actors'/entities' beliefs, accounts, stories, narratives about appropriate action and underlying problems in international policy	Interviews, participant observation, document analysis
Actors and their accounts about relation with and motivation for design, their understanding of design and expected contribution from design	Interviews, participant observation
Actors present and involved, their institutions and roles therein, and function in the design process/relationship with design team and structure	Document analysis, interviews, participant observation
Public appearance and narratives of design projects; tangible moments and mechanisms (tools, methods) deployed to externalize value associations	Document analysis, interviews, participant observation
Objective 3 [Case III]	
[Main] Conduct a participatory design in policy project to reveal the practice of design in the international policy context and its contribution in generating co-owned value (to deep dive into public value generation by design)	
THE PROCESS & THE PRODUCT	
A design-led, experimental governance initiative A globally leading tech company 2020-2021	

Units of analysis	
- Design practice deployed and its potential to draw collective value from individual actors' (e-)valuations - Interactions created through design practice that fulfill needs or are perceived as such - The public value experiences or perceptions that design practice creates in the eyes of the involved actors	
Units of observation	**Methods**
Rationale, reflections, and logic that compose the design practice: perceived problems and contextualization Tools deployed in design practice assumed to satisfy needs and create relations Statements and feedback about design practice/perception of design practice and value obtained from practice for participants and actors involved	Practice and practice observation, document analysis, (interviews and survey) Interviews, survey

3.3. Methods

This section introduces the methods I use to unpack the units of observation and analysis that help me find answers in line with my two empirical research objectives. I discuss case study research, which I use for cases one and two (objective 2), and action research. The latter, given the nature of objective three, I deploy for my third and main case. Refer to Table 6 for an overview of my research cases and Table 7 for a view into research objectives, units of analysis and observation, and corresponding methods. In Appendix A, Table A2, you will find an overview of the interview research per case including actors involved.

3.3.1. Case study

The understanding of a "case study" or "case" and their definitions may vary across disciplines and fields of study (Schwandt and Gates 2017, 600). What figures prominently in case study research, however, is to deploy a case-based approach, first of all, when the researcher wants to learn deeply about a case to contribute to knowledge in a domain. The former is called a 'holistic' (Yin 2018) or 'intrinsic' (Stake 1995) case study approach, as opposed to case studies that seek comparability, for instance: One concentrates on one case

and asks *"what specifically can be learned about the single case."* (Stake 2005, 433). Via the case as an *"[i]n-depth study of a single unit (a relatively bounded phenomenon) [...] scholar's aim is to elucidate features of a larger class of similar phenomena."* (Geertz 1994, 341).

Furthermore, I aim to let the cases I investigate (both preliminary and main) talk for themselves whilst basing my analysis in actual phenomena that occur in today's international policy-making realities: One wants to undertake a case study to "*understand a real-world case"* (Yin 2018, 45). I consider contextual and real-world relations particularly vital for advancing the research of design in the (international) policy realm: Already Buchanan (2001) points out the importance of pragmatic considerations (e.g. of context) in design; and Yin (2018) underlines that case studies are a solid method to use when the phenomenon at hand to study involves important contextual conditions that are shaping that very case.

I also implicitly acknowledge that, how design practice interacts with its very context, or notably with the actors who design, the problem (or motivation) that leads to the deployment of design in the first place and, consequently, the design process, or vice-versa, might be a gray zone and hard to dissect: *"A case study is an empirical method that investigates a contemporary phenomenon (the "case") in depth and within its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident."* Similarly, I am aware that generalizability across all my three cases is not an automatic, logical consequence given *"[t]he study of the particularity and complexity of a single case. [...C]ase study research is not sampling research. We do not study a case primarily to understand other cases. Our first obligation is to understand this one case."* (Stake 1995, xi, 4). The common trait of case studies, however, remains that they produce information about issues outside of the given case (Buchanan 2001a; Friedman 2000): *"They assemble information or data that may give insight into problems that reach beyond the individual case."* (Buchanan 2001: 18). Acknowledging the contextual relevance for design across the specific cases I let the cases stand as idiosyncratic (Stake 2005, 4) and view them from their peculiar angles and viewpoints.

My research inquiry into the value from design and in creating public value in the international policy-making context is qualitative across the two preliminary and main cases, and respective objectives I seek to uncover (see Table 6 and Table 7). *"Qualitative research is a situated activity that locates the observer in the world. [...] This means that qualitative researchers study things in their natural settings, attempting to make sense of or interpret*

phenomena in terms of the meanings people bring to them." (Denzin and Lincoln 2018, 43). The qualitative intervention transforms the studied world into *"a series of representations"* - like field notes, interviews, conversations, photographs, recordings, and memos (ibid) - *"to develop a complete, detailed portrayal of some phenomenon"* to tell a story and *"to give voice".* (Schwandt and Gates 2017, 607).

I deployed **interviews** as a main data collection method for the preliminary cases I + II to explore established practice in design in international policy and related motivations and actors. I used them as an in-depth tool of analysis or as intercepts or smaller interventions during research (Wasson 2000), to inquire or double check findings made based on documents or anecdotes.[36] I also used interviews to collect information that was difficult to obtain through my methods across the two studies or, where I needed to gain insights directly on the spot, mostly during physical on-sites in the preliminary cases: *"One function of these interviews was to provide information about behavior that took place in settings where participant observation was not feasible."* (ibid, 383). In my preliminary cases I kept the interviews open ended but started with a protocol or list of issues to explore. This was important given that design in policy was a very novel domain when I started my research (see section 3.2.1). In my main case, the interviews followed a more focused format. I asked, e.g. about the value from design and decided to deploy a structured interview approach in the form of a survey (Google form). I had to do the latter with the design project's participants and experts involved: This was, on the one hand, out of resource and time constraints of the former (they were both also actively running the design project in practice and had limited time available), but also due to research agreements with my case study host (to not potentially negatively interfere or confuse with the ongoing design project which equally included in-person interviews or conversations). – For an overview of the interview research and actors involved in it refer to Table A2 in Appendix A.

As part of the interview research, I also used what I called a **"mini-activity"** – see shaded and in italics below this paragraph. This activity simulated the process of making policy. The

[36] I recorded the interviews and had them run for 45-50 minutes (excluding explanations or questions by the interviewees), thereby navigating generally busy schedules and time constraints of the selected interviewees and study participants. In my main case, the conducted interviews were, occasionally, lengthier (between 60 and 90 mins). This was likely due to generally interactive and productive flows of conversation; I however also sensed heightened interest in the domain of design in policy as such, and more practical and theoretical knowledge about it across certain project partners (notably the implementing partners). In general, readiness to participate as an interviewee in my research was extremely high and held true for both the partners and the participants in the design project (see main project description below for all details on the actor involvement in the design project).

interviewees' task at hand was to "build a public policy from scratch". I provided four elements that represented the public value triangle approach, namely 1. Public problems, 2. Public value, 3. Capabilities, and 4. Legitimacy (see the task description as follows). I also included a Wildcard category, that let interviewees add a category in case they felt a (non-indicated) element was vital in the course of building policy, based on their experience. The interviewees received the mini-activity prior to the interview with instructions to fill it in prior; C3IV1 (case three interviewee number one) and C3IV3 filled the activity in as part of the interview. I interrogated interviewees about the mini-activity in the last and final part of the interview, notably posing questions like how they felt in the mini- activity and with the task at hand. I also asked them why they prioritized the elements the way they did and what their rationale was. See the mini-activity shaded as follows:

You are asked to build public policy from scratch. How would you prioritize the following elements and reflections of yours?

1. *Public problems: I need to look at the challenge I am trying to solve for in a given policy context*
2. *Public value: I need to make sure I understand whom I am building policy for, and make policy in a way that speaks to what the identified addressee(s) really need(s), to secure their well-being in society*
3. *Capabilities: I need to ensure that the policy I want to issue has enough capacity, know-how, and resources in-house in order to be realized (e.g. enforced); I also evaluate whether complementary input is required through, e.g. public private partnerships or realization through agencies/civil society, etc.*
4. *Legitimacy: I need to secure buy-in for the policy I want to realize from those stakeholders that can lend most credibility to it and at the same time authorize it; only that way the policy is being implemented*
5. *[Wildcard - to fill in if you think a category is missing]: e.g., I need to make sure/enable/secure …. in order to … because …*

Indicate the order of your responses here, starting with the element of highest priority on the left, going to lowest as you proceed to the right.

As for **field notes,** I have collected them hand-written on handouts (e.g., when in meetings to annotate existing information with relevant verbal additions) or in notebooks or in a dedicated word document assigned with the date and day of the respective field notes, where applicable including a title on the core task observed or immersed into that day (Phillippi and Lauderdale 2018). I usually have taken field notes as the moments of observation unfolded. When facing packed days with many meetings I would take notes on major observations in a lunch or coffee break or in the evening before leaving the premises of observation. I followed publicly available information, e.g. documents (on- and offline) or publications, social media activities, blog posts, or conference presences when on-site at the organizations and once agreed field visits were over or interrupted. Matching primary data with the secondary material helped me put into context what I observed from the immersive and sometimes also absorbing moments of being a member of the team. The resulting mind space let me draw more objective and structured insights in my descriptions of the respective case culture (Laurier 2010; Spradley 1979) and of what the settings and actors therein produced and contained.

3.3.2. Action research

Action research (AR)[37] is a recognized approach to inquiry-led and generative epistemologies and one that highlights design's inquisitive nature. It is hence particularly apt for my exploratory inquiry into design in the international policy realm and my case studies that have evolved over time. Archer (1995) defines AR as *"[s]ystematic investigation through practical action calculated to devise or test new information, ideas, forms or procedures and to produce communicable knowledge."* (6). AR is usually undertaken by practitioners rather than by researchers, such as in medicine, education, business (Archer 1995). The latter element is central in my main and practice-based case (case III).

AR is *"a practical research methodology"* (Swann 2002, 55). Three conditions must usually be met, namely: creation of change in a social practice, equitable participation in the

[37] According to Swann (2002), Schön's concepts paved the way for action research: With *The Reflective Practitioner,* Schön (Schön 1938) formulates an epistemology based on how practitioners reflect "in action" and "on action" - thus during and after work. Schön alludes to how problem-framing and situations can be changed, or what norms and possibilities are prioritized or available over others, thereby quite intentionally showing a relationship with the design process.

underlying collaboration, and iterative cycles of "*planning, acting, observing, and reflecting in a systematic and documented study."* (Swann 2002, 55). The spiral of cycles of action and research consists of four major moments - *plan, act, observe, and reflect* - and through that spiral may lead to identifying new problems (whereas: plan = analysis and strategic plan; act = implement; observe = evaluation of the action by appropriate methods and techniques; reflect = on the result of the evaluation and on the whole action and research process) (Visocky O'Grady and O'Grady 2009). The AR methodology adds "*two essential ingredients"* (Swann 2002, 55), namely emancipatory participation and systematic reflection. I adopted the AR approach in my main case as it allowed me not just to reveal the thought process based on plan-act-observe-reflect. It additionally enabled reflection on-(own)-action and a *"hindsight view"* (ibid, 59): I invited the project-integral and -adjacent actors (project partners, participants, etc.) - thus the users of my design process - not just to jointly act but also reflect the process and journey we were on together. By that I did not just practice design itself as a *"collaborative and emancipatory exercise"* (ibid, 59), but also reflected it in that same fashion.

Participation and collaboration in AR require all participants to obtain an active role in the synthesis process and in the developmental process. Subdisciplines such as participatory action research (PAR) or community action research (CAR) make that emancipatory character in both action and reflection even more explicit and tangible. PAR takes many forms depending on the particular context and issues involved. Broadly speaking, it is research *by*, *with*, and *for* people affected by a particular problem, which takes place in collaboration with academic researchers; it seeks to democratize knowledge production and foster opportunities for empowerment by those involved (Kindon, Pain, and Kesby 2007). CAR bases on the community as the unit of analysis, destined to forge alliances with relevant community stakeholders to explore and develop solutions to local problems. While diversities in the approach persist amongst researchers, researchers present three elements as cross-cutting rationales that are agreed upon (Ozanne and Anderson 2010): Namely to (1) *include multiple partners* from the community as collaborators in the research project; (2) *try to solve practical problems situated in the locally defined priorities*, to improve well-being or reduce community inequalities; (3) *rely on education and empowerment,* encouraging community members to develop new skills, reflect on their socio-economic conditions, and act in their own self-interest. Particularly through the latter point it becomes evident that, under CAR, community members co-produce both research and the practical programs of social intervention (ibid, p. 124). Three CAR characteristics are particularly pronounced in my main case, given its (1)

naturally collaborative, multi-stakeholder (community-based) embeddedness (2) lack of effective AI governance solutions, notably in marginalized regional blocks (investigated region B); (3) path to enable generation of governance proposals that are feasible in practice across policy and technology decision-makers locally.

AR lives particularly in contexts where explanations or knowledge around a concept or idea are hard to generate in the absence of active, interventional inquiry. Similar to what scholars mention to apply for case research (see section 3.3.1), Archer (1995) states *"[t]here are circumstances where the best or only way to shed light on a certain concept proposition, a principle, a material, a process or a function is to attempt to construct something, or to enact something, calculated to explore, embody or test it"* (11). AR allowed me hence to dive deeply into active inquiry into the international governance setting. Thereby, AR is *"situated in the social practice"*, as Swann named it. Frayling (1993) would say that AR is a *"systemic enquiry conducted through the medium of practical action; calculated to devise or test new, or newly imported, information, ideas, forms or procedures and generate communicable knowledge"* (11). In AR, a *"research diary tells in a step-by-step way, of a practical experiment in the studios, and the resulting report aims to contextualise it. Both the diary and the report are there to communicate results, which is what separates research from the gathering of reference materials." (ibid, 5)*. In case III I created a **diary** to collect reflections and sense-making with research participants. Scholars propose that the practical action may be driven through usability and/or user testing, where methods are used to *"measure a [specific] product's ability to satisfy the needs of the end user (accessibility, functionality, ease of use) while also meeting project requirements (budget, size, technical requirements)"* (Visocky O'Grady and O'Grady 2009, 52). Allowing for end user perspectives to unfold and to ultimately test - not products but - policy was a core rationale since inception of my design in policy work and main practice (see section 4.4 Design practice rationale and approach).

3.4. Overview of research settings

The research settings I investigate are dedicated spaces or teams within the given public, hybrid, or private sector organizations, tasked with providing design-led approaches to policy making. With policymaking and policies being diagnosed as 'ineffective' government leaders, policymakers and the public are prompted to look for better strategies (Bason et al., 2013;

OECD, 2015): Unleashing the power and principles of novel approaches onto the policy process, so the hope, would pave the way for new and better policies and enhance policy 'agility' over reactivity (World Economic Forum 2018), social uptake, and diffusion. Nontraditional approaches to policy making, amongst others design-based ones, have come to emerge in the form of 'labs', 'policy labs' or 'public sector innovation (PSI)' labs (McGann, Blomkamp, and Lewis 2018).[38] As follows, I present a short overview of the three settings that constitute my design cases, including the main role and purpose of my research involvement.

3.4.1. EU Commission: EU Policy Lab

Launched in 2016, the EU Policy Lab self-declares as a *"collaborative and experimental space for innovative policy-making"*[39]. At the time of studying, it applies three disciplines: *Foresight*, *Behavioral Insights*, and *Design for Policy "to explore, connect and find solutions for better policies"*. The Lab presents itself on its website as both *"a physical space"* and *"a way of working"*. The Lab team consisted of a good two dozen in-house employees at the first field work on-site in autumn 2016. The Lab is hosted by the organizational structure of the JRC, the *Joint Research Centre*, which is the European Commission's in-house science service. The Lab's Head of Unit at the time of my active research involvement at the Lab (2015-2017), *Xavier Troussard*, presented the Lab on a panel discussion: It *"bring[s] new insights for policy-making and foster[s] innovation"*. It *"co-designs projects with colleagues in Commission services [and] [e]xploratory sessions help reframe issues and to see how and where support is needed."* In November 2017, when I closed my field visits and active research involvement,

[38] Labs are novel structures in policy that propose alternative ways to traditional policy-making approaches: They are often categorized as 'enablers' for public policy innovation (OECD 2017b; 2017a; Puttick 2014), engaging all stakeholders, including citizens, in the design process (Fuller and Lochard 2016) of policy. As innovation spaces, labs introduce design, creative, and user-centered approaches into policy-making, propose experimental ways to test policy pathways, and contribute to shaping or implementing public policies often working for or within a government or administration (Fuller and Lochard 2016). Labs emerged early in national administrations - the Danish Mindlab was the most pioneering initiative of that kind globally, up and running from 2007 until 2014 (Apolitical 2018) - and most of them were established from 2012-2016. In 2016, Fuller and Lochard (2016) reported seventy-eight lab structures across Europe, most of them within national member states. At international policy-making level, labs only started to emerge around that period of time: the EU Policy Lab kicked off in 2016; the International Monetary Fund (IMF), to compare, launched its lab in 2017 (IMF Podcasts n.d.); so did the World Economic Forum with its Centre for the 4th Industrial Revolution (C4IR), case II studied in my research.

[39] If not indicated otherwise, all quotes and background details in this paragraph are taken from the EU Policy Lab's website at http://blogs.ec.europa.eu/eupolicylab/, first accessed 20 April 2016, last accessed 16 December 2019

the Lab had twenty projects up and running (OECD, 2017d), out of which at least eight were design-led (This is equivalent to the number of design projects I was made available to follow in my research.).[40]

The first field work on-site at the EU Policy Lab took place from 9-23 October 2016, with a second following a year after from 1-15 October 2017.[41] Both periods were negotiated with the Head of the Lab Unit. Content of my participatory engagement and my exact role were negotiated bilaterally, with suggestions stemming from the EU Policy Lab after explaining my research interests - exploring what design in policy meant and what practices were deployed (research objective 2) - in more detail. While the first on-site served to understand the motivation for design in policy, based on lab employees, policy maker clients, actors in the policy innovation and design ecosystem, and the lab as an institution and way of working, the second allowed me to analyze up to eight design-based lab projects up and running at that time (both based on paper-based documentation and through interviewing the lab clients) to explore and make sense of the practice of design in international policy in more detail.

Altogether, on the EU Policy Lab and its Lab entourage, and throughout two physical fieldwork on-sites since fall 2016, I obtained twenty-seven interviews, 40-70 minutes each (depending on the availability of the interviewees). Nine out of them stem from institutions other than the EU Policy Lab or the Commission Directorate Generals (DGs), namely OECD Observatory for Public Sector Innovation, Waag Society, European Political Strategy Centre (EPSC), UK Gov Lab, Government of Northern Ireland, French 27ème Région, French Departement of Val d'Oise, and Swedish Förnyelselabbet. Out of the twenty-seven, I undertook one validating interview with a government innovation specialist at NESTA. I collected fieldnotes from observations and immersions, and collected documents (from websites, blog posts, press coverage, videos, social media, and newsletters) to help substantiate the research and interview conversations in case required.

[40] I was working as a Bluebook trainee at the EU Commission from 2014 to 2015, enabling me to discover the existence of the EU Commission's Lab. This was due to the genuine interest and early knowledge I started to develop about design-led approaches myself, and through which I subsequently engaged in discussions about (with work colleagues, or network made).

[41] The EU-wide policy lab conference hosted by the EU Policy Lab '*Lab Connections'* from 17-18 October 2016 remained the first and initial focal point of my immersion and observation experience, which opened the possibility to discover the wider network behind the EU Policy Lab through stakeholder presence and conference material. See https://blogs.ec.europa.eu/eupolicylab/lab-connections/, last accessed 9 January 2019; later https://policy-lab.ec.europa.eu/index_en, last accessed 29 August 2023.

Reasons for choosing the EU Policy Lab as research setting and case I

- First investigation to understand what design practice in international public policymaking looks like and how design is deployed in such setting
- The Lab has a leading governance function in promoting policy making by design: it is by nature a policy lab in a globally leading supranational policy organization; lower governance levels can be expected to absorb and/or look up to the Lab's policy-making activities (notably EU member states and national and regional government labs within the EU)
- The EU is a unique policy-making context given the EU and the EU Commission are *sui generis institutions* (meaning unique in their existence): With its unique policy decision powers, however, the Lab deploys design practice from *within* a policy institution, servicing policy managers as if it was an in-house consultancy arm, which is representative for the go-to modus operandi across organizations in international policymaking
- The Lab works on geopolitically and thus strategically important policy questions for the EU (as a (geo-)political block)
- Right from the beginning, the Lab (leadership) showed strong intrinsic motivation and openness for me to develop research-based policy design learnings from including it as a field study/case in my research

3.4.2. World Economic Forum: Centre for the 4th Industrial Revolution

I first found out in January 2017 (thus after my first case I on-site) about the World Economic Forum (WEF)'s policy innovation activity, named *Centre for the 4th Industrial Revolution* (C4IR). This was thanks to a TechCrunch article announcing the initiative[42] titled *'The World Economic Forum is setting up a tech-focused hub in San Francisco',* released on 14 December 2017. According to the first Centre Lead, Murat Sönmez, the 'hub' would tackle *"[the] policy question about how do you maximize the benefit to humans and minimize the downside" 'of most innovations coming from technology companies"*. Up and running since

[42] https://techcrunch.com/2016/10/10/the-world-economic-forum-is-setting-up-a-tech-focused-hub-in-san-francisco/, last accessed 9 January 2019 (Shieber n.d.)

March 2017, the C4IR announces on its homepage[43] that: *"[They] partner with governments, leading companies, civil society, and experts from around the world to co-design and pilot innovative new approaches to policy and governance in the Fourth Industrial Revolution."*

The launch article (aforementioned) promised that the Forum would establish *'a new facility'*, that *'will focus on bringing government officials and tech companies together to create frameworks for more productive legislative policies that can be implemented worldwide.'* Reaching out about including the C4IR as a case study to first Murat Sönmez on LinkedIn, I doubled down on that outreach via a researcher connection in the Netherlands (through a conference attended at my previous university enrolment), who forwarded me to the Centre's Head of Technology Policy and Partnerships, Zvika Krieger. I was confirmed that I could study the Centre right after the initial, formal email inquiry to Zvika and an additional phone interview between Zvika and myself.[44] In the calls and email exchanges, the proclaimed human-centered design approach the Centre would follow became evident. Prototyping in governance should be the main design sub-tool that the Centre would use to develop international policy (soft- and hard-) aiming at regulating and standardizing 4IR technologies. The former thus spoke strongly for inclusion of the C4IR in my PhD research. With the traditionally multi-stakeholder approach of the Forum, I was convinced my case II would enable me to understand even better the actors present and involved in design processes in international policy, as well as their relationships, apart from immersing myself into another, and globally prominent and renown, design practice approach in international policymaking and governance.

Altogether, on the World Economic Forum C4IR and its entourage, and throughout two physical fieldwork on-sites from November 2017 until April 2018, and from August-September 2018, I obtained twenty-one interviews, 40-70 minutes each (depending on the availability of the interviewees). Three out of them stem from institutions other than the WEF or C4IR, namely 18f, the United Nations (UN; Innovation Facility UNDP), and the New York Public Policy Lab. Out of the twenty-one, I undertook two validating interviews with the latter two, namely the UN and Public Policy Lab delegate. I collected field notes from observations and immersions and collected documents (from websites, blog posts, press coverage,

[43] https://www.weforum.org/centre-for-the-fourth-industrial-revolution, last accessed 9 January 2019 ("Centre for the Fourth Industrial Revolution (C4IR)" n.d.)

[44] Only about a few months into my physical on-site, in 2018, I was told that an HR lead/administrative delegate from the Centre was shadowing the interview, to cross-check my compatibility and capacities.

videos, social media, and newsletters) to help substantiate the research and interview conversations in case and where required.

Reasons for choosing the Forum C4IR as research setting and case II

- The Forum is a globally recognized convenor which champions policy discussions and crafts governance focus areas through actor involvement globally, given its originally hybrid and public-private(-civil society) legacy[45]
- The Forum C4IR in San Francisco, back then its first dedicated unit globally, was expressly set up around crafting new policy and regulatory proposals through design-led mechanisms and piloting and prototyping in the governance of new and emerging technologies; their approach should maximize human benefit while minimizing harm from new and emerging tech, through proper governance guidance and decision-making
- The Forum C4IR was constituted by explicit private and public sector involvement: this meant it would constitute diffused ownership into the activities by integrating a wider stakeholder base directly in decision-making process and implementation
- The Centre was set up to propose policy by 'human-centered' design and 'prototyping policy' at international governance level, thereby proposing explicitly to go beyond principally public sector-owned structures and tasks (compared with case I, EU Policy Lab)
- The Centre leadership were motivated and supportive for my involvement, provided I would contribute through my research and design expertise to the Centre activities (which guaranteed a less loose involvement than in case I, namely as an active contributor-observer rather than a passive one)

[45] The Forum was founded in the 70s and is *"an international organization for public-private cooperation"* recognized as such under Swiss law. The Forum is not an international organization such as the UN, or those emerging from Bretton Woods (IMF or World Bank), which are fully ratified as such by sovereign nation states.

3.4.3. Worldwide leading tech company: A global design-led governance initiative[46]

The third and last research setting chosen, and at the same time main design practice project to my thesis, is tied to a globally operating private sector organization that supports public policymaking at an equally global level through a dedicated design-driven initiative. The first regional pilot of that initiative was implemented in July 2020 and then scaled. By 2021, it had grown into a fully-fledged initiative under its own name and with multiple regional presences globally, continuing to contribute to the governance debate in technologies.

I asked for research access while I was actively the design lead and manager of the project, in charge of crafting the design-led approach, the initiative implementation as a pilot and roll-out in other regions, including partner (community) engagement and the program's communication and branding globally. I also drafted the program strategy, which included visions down the road, notably the differentiation of the design-led approach for foreseen projects, including the diversification of project types under the initiative. One of the initiative's core pillars is to operate with a design-led approach that follows collaborative and broad actor integration and is thus participatory: the initiative foresees a high degree of collaboration and crossing of diverse perspectives through design, particular through an approach that integrates policy end users' standpoints in the making of public policy formulation and recommendation. "Policy user" or "policy end user" are terms I coined during my time at the EU Commission, when I had started to reflect design approaches and their applicability in governance.

The initiative's focus is to explore, through this co-creative, participatory design-led mechanisms, what the governance of new technologies, e.g. automated or data-driven decision-making based on artificial intelligence (AI) or machine learning (ML), can look like. The aim is to provide recommendations to policymakers and product builders in this, in the early 2020s, only nascent realm of AI governance (see main case practice description, sections 4.3 and 4.4, for more detail). To craft those policy recommendations, the initiative deploys a design-led process that helps test an idea of a potential public policy direction in

[46] The researcher, in order to investigate this high-level program, needed to commit to anonymize both the organization and the initiative based on which the design practice is being investigated in line with her study objectives.

the form of a so-called policy prototype (i.e., the idea of a regulation, or policy paper, put to text and test for the duration of the initiative) with those implementing such potential policy guidance. The latter can be young or established private sector companies but also other actors, like associations, think tanks, NGOs, etc.. The policy prototypes are tested with the select set of interested policy end users for parameters such as effectiveness, relevance, or feasibility of responding to the potential governance requirements. The project participants, as testers of the prototype, are thus policy end users; they gather, in the initiative, based on intrinsic willingness to be part of the project (no financial compensation involved), in order to test in practice the applicability of the governance direction as it is proposed in the form of the policy prototype. The additional aim of the project is hence to provide recommendations and learnings for technology builders and product designers themselves, in other words, to develop also the realm of product design and governance, enabled by the policy prototype guidance. With the help of the participating testers, the policy prototype is checked for effectiveness of the intent of the policy idea - i.e., how well can the policy's goals be acted upon in practice and hence accomplished.

Constituting my main case and design practice in my research, and in line with my research objective 3, I wanted to extract the value obtained from my design practice deployed in the initiative. I gathered notes on the rationale, reflections, and logic that composed the design-led practice in the initiative, mostly guided by the problems and context, in which it came to life initially and evolved over time. My key interest was, based on the well-reflected design practice, to explore how the practice was perceived and satisfied the needs of the involved actors, or potentially opened new ways of thinking. Deploying participatory, action-driven research in case III, I turned to the project-integral and -adjacent actors (enablers, partners, participants and recipients (i.e. the policymakers or product builders)), as indicated in Table 8 below. I asked them for statements and feedback about the design practice, to explore their value associations ((e-)valuations) or the perception of the value from design in the context of the international policy setting that it unfolded in. The core elements I uncovered were value associations about the design practice, made by participants and partners and the associated, major actors involved in and affiliated with the project. I researched the initiative's regional project in region B, in line with the preference of the initiative's host institution (thus anonymized tech corporate) and conditional for me as a researcher to obtain access to the field.

I had approval for research in my lead designer role on the case from February 2021 until March 2022, a period tied to both the operational implementation of the program as well as its latest planned public dissemination of results at the time of implementation and planning of the project throughout May 2020 until January 2021 (Note: Results are not yet published in April 2022, when I write this section.). I shared the questionnaire from mid-September until mid-October 2021, given it was the period right after closing the practical implementation of the program with the companies and the experts. I undertook the interviews in parallel to collecting the survey answers, from September until November 2021, and obtained 8 survey responses (out of which 5 from companies, thus fifty per cent of the cohort participating in the design project) and 8 interviews throughout that period.

Table 8: Study participants' relationship with regards to design-led initiative (case III)

Taxonomy overview: Involved parties/actors in the design of public policy (case III)				
ENABLER	Initiator	Multiplier		
PARTNER	Implementer	*Expert*	Supporter	Observer
PARTICIPANT	*Company*			
RECIPIENT	Government	Regulator	Facilitator	Implementer
Note: One party/one actor may hold multiple roles				

The interviews covered a selection of program-adjacent and -integral actors. I have interviewed enablers of the design-led process in policy within the host institution (Enablers were members of the host organization who supported the project, but not directly a part of the designing team.). Those involved in project implementation in the host institution's regions were at least aware about design-led approaches in the institution, if not practicing them themselves (and hence considered multipliers of design practice). The interviews included at least one delegate per involved project partner (A partner helped enable and implement the project.). I asked both the participating companies in the design-led project (participants) as well as the experts involved in the design-led project (partners) in the region to evaluate the practice. From the companies who participated in the design-led project (ten in total) I pre-selected based on their affinity with the English language (I conducted the program, other than my research, entirely in the local language). To shortlist for the former, I asked for help from the local implementing partner and co-initiator in the region. Project partners could oversee implementing the project operationally (one main implementing partner), be passively or actively supporting the program as an expert individual (scientists, for instance) or organization (other international bodies, for instance), or be the addressees

(recipients) of the design-led project's outcomes (law makers, policy decision makers; see Table 8 above).

Reasons for choosing a globally leading tech company's design practice in governance for case III

- Aims expressly at closing the gaps between those defining policy content and those using it, i.e., policy makers and policy recipients ("policy (end) users")
- As the main design lead, the researcher had the chance to develop the practice herself, including be closely exposed to those making use and co-creating the design practice
- Design process is optimized for the policy user to be able to express perspectives as a tangible and actual part of the design-led policymaking process
- A design initiative established since inception and by design as a collaborative, multi-actor governance design approach, albeit being initiated and supported by a private sector institution
- Implements design approach to create new evidence for governance approaches in new and inclusive technology/ies
- Raise awareness for and build upon the fact that the private sector institutions and others bear a role in public policy and governance debates, also when done by design

3.5. Data management and analysis

Thematic framework analysis

To analyze the data obtained I followed framework analysis, a content analysis approach developed by Ritchie and Spencer in the early 90s, notably Ritchie, Spencer, and O'Connor (2003) and Ritchie et al. (2013). Their approach is a theme-based approach that makes use of so-called thematic hierarchies (themes and sub themes) to unpack emerging topics of

qualitative data sets and retains links to the original data obtained. The thematic framework is the central component in their method: it is used to classify and organize data according to emerging (and later in the analysis key) themes and concepts and is obtained through familiarization with the raw data and evolving, iterated categories thereof. The scholars propose that each (case) study base itself on a distinct thematic framework that comprises a series of main themes (usually 5-7, including a 'other' theme), subdivided into their related subtopics. The latter evolve from the raw data, through familiarization, and can be refined throughout the labeling of the raw data. Once judged to be comprehensively analyzed based on the case-related thematic framework, each case's thematic framework is displayed or 'charted' in a matrix format - the 'thematic chart' - following the thematic framework categories. Thereby, each respondent or data subject is allocated a row and each column denotes one of the themes with its sub-theme in the thematic framework.

I judged the thematic hierarchy approach as particularly integral to managing and analyzing my data sets. I wanted to let the data, that I generated for each of the three case contexts, to speak for themselves. At the same time this approach enabled me to make comparisons within the cases and the different data hierarchies I would obtain. The latter was supportive for data interpretation, to answer my overall research question and derive a holistic narrative and picture from the whole dataset (i.e. all three cases). I deemed particularly important to allow for the development of dedicated thematic (and hence analysis) frameworks (one for research objective 2, one for objective 3), to preserve the case idiosyncrasies and varieties in the themes generated. The thematic framework analysis approach enabled me to not close the exploratory funnel of the themes and topics too early. Furthermore, the framework method is said to be particularly suitable for analysis of interview data, which is a principal data collection method across all my cases. At the same time, the method is applicable to notes, documents, or other text-based data. This guarantees applicability of the method across the interview-based and practice-based cases and supports me in iterating and merging the data collected through the different data generation approaches therein (interviews, notes and document collection, questionnaires). Given the amount and variety of the data I obtained and analyzed in my study (observational and document-based notes, interviews, plus questionnaire data for case III), the framework and thematic charting approach allowed me to establish an ordered and clear link to the initial data in a homogeneous way across all cases and data sources. Additionally, the management of my data sets is facilitated by the structured and established approach Ritchie and Spencer propose: the matrix format provides an accessible overview of the summarized data; the

step-by-step process that the researchers provide to follow the framework method and matrix creation facilitated the gathering, management and cross-comparison of the data sets over time. The latter was primordial in my study, as my research has spun over multiple years and across organizational contexts.

Test run on a subset of data and potential revealed

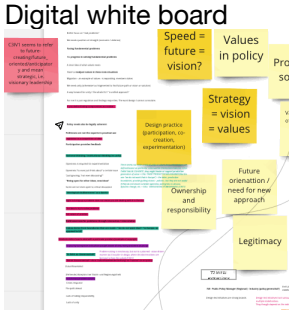
Ritchie and Spencer's approach revealed itself, after I had tested it on three interviews (from case III), as a method that was straightforward to follow for myself and hence likely very repeatable for future scholars and practitioners in the design in policy context. Scholars report thematic framework analysis as a go-to qualitative research mechanism in applied policy research (i.e. to assess quality and impact of policy and renew them) (Srivastava and Thomson 2009) as well as large scale social policy research since the 80s (Gale et al. 2013). This provided me with confidence that the approach I had chosen as the researcher was based on tools that the interdisciplinary target audience of my work and results - those making policy and governance decisions in public or private domain - could relate to and potentially build upon.

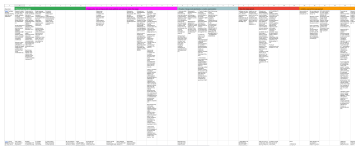
Finally, the thematic approach allows for crafting the themes and topics directly out of the qualitative data obtained from each case and follows hence a genuinely exploratory approach. I consider the latter to be a central element to my study in which limited scientific knowledge exists (see literature review, 2.5 Design in policy). I obtained cross-sectoral inspiration to deploy thematic analysis in my design and policy domain by the work proposed by writer and historian Rebecca Solnit (2014): She talks about the disappearance of experiences and voices that arise from willful - and thus in a way orchestrated - suppression *or* ignorance. I derive from that for my own work that **every voice we do not include and hear will lead to suppression and loss of diversity of perspective**. By letting the raw data generate the analysis framework I enable an amalgam of perspectives and backgrounds to constitute my research insights. Finally, Ritchie and Spencer debate themselves the growing recognition of qualitative research, such as framework analysis, in exploring emerging social and policy issues (Ritchie and Spencer 2002).

Thematic charting process and its steps

The steps I followed to arrive at the thematic analysis framework and chart (see Table 9 below) were first to familiarize with the data. I relistened to the interview recordings, while refining the interview transcripts I had obtained in their raw versions with the help of a digital transcription software. This helped develop a sense of key themes and subthemes. I subsequently screened three interviews per data set - e.g., for case III, numbers 1, 7, and 8, as they provided complementary, diverging, and representative viewpoints (parameters: relation to the case, type of organization, seniority, or experience with or exposure to design, as well as age and gender) of the data. In a digital white board, I extracted the main topics addressed in original wording, one by one, for the three interviews. For case III, I obtained 67, 72, and 120 initial extractions of passages, respectively (when breaking down on an average this would amount to approximately 1 extraction per minute of interview conversation). From extracting the passages, I could identify higher-level themes that I annotated with the help of digital sticky notes next to the identified passages and based on clustering them. I color-coded across the chosen initial three interviews, guided by the emerging themes annotated, the passages that spoke to similar topics. Through this approach of data familiarization, I obtained my analysis framework (called conceptual framework or index), i.e. a first set of categories through which to analyze and interpret my data. I iterated the refined conceptual analysis framework further by checking whether the categories I obtained made sense in the context of the main objectives and units of analysis I had predefined for the respective case.

Table 9: Illustration of steps taken in thematic framework analysis, with description of outputs obtained, actions and tools deployed and visualization

Thematic framework: development and analysis - main steps (case III, main)			
PROCESS STEPS and goal(s)	*Action taken*	*Tool used + illustration*	*Output obtained*
1. FAMILIARIZE WITH DATA **Obtain sub- and main themes**	• Pick three representative interviews for data set • Derive main and common topics talked about; cluster topics for sub and main themes to emerge • Cross-check the themes obtained with the main research question and objectives	Digital white board 	Thematic analysis framework

	for resonance		
2. TEST AND DEPLOY THEMATIC ANALYSIS FRAMEWORK **Secure thematic applicability and scale**	• Pick one test interview transcript • Apply thematic analysis framework and label passages (color-codes and numbering) to secure appropriateness and refine categories • Label all interviews accordingly	• One text document per interview • Color-codes/numbering to label themes 	Labeled raw data
3. CHART DATA BASED ON CASE THEMES **Order and obtain insights**	• Transpose raw data per passage into thematic chart • Annotate with cross-links, e.g. comments, quotes • Refine themes and interpret for outcomes	Excel sheet 	Case III overview for findings extraction

Thematic analysis framework and chart - example for case III (main case)

Following the above-described steps of data familiarization and generation of themes I obtained the thematic analysis framework that revealed themes - 6 of them for case III - with respective sub-themes - between 4 and 8 per theme for case III[47]:

1. MEANING OF VALUE FROM POLICY
2. DESIGN PRACTICE: TOOLS AND IMPLEMENTATION
3. PERCEPTION OF DESIGN PRACTICE
4. VALUE FROM DESIGN APPROACH
5. LIMITATIONS EXPECTED FROM DESIGN PRACTICE
6. OTHER

[47] Note that the researcher used color-coding for the themes to better distinguish them when working. This color-coding is not available in the black-white printed version of the thesis.

I assigned unique colors to each of the themes (as illustrated), to be able to index the interviews through color codes accordingly in the word documents. Before indexing the interviews, I had tested the thematic analysis framework for feasibility by color-coding one interview per case as a test run and iterated the framework accordingly if needed based on the test. I also created the thematic chart (matrix) for the case, after the test run. For that, I used an excel file, in which the rows hold the data subjects (interviewees and/or questionnaire respondents) and the columns the themes and subthemes/concepts (columns reflect the thematic analysis framework categories for case III). Column 1 in the chart contains the characteristics of the subject I defined as *Serial No., Role in relation to case, Organization type (policy, gov, private org etc.), Seniority, Design experience*. The Serial number followed the logic 'C' for 'case' and 'IV' for 'interview', numbering case and interviews obtained per case accordingly (numbering followed simply the data of the interview without any deeper meaning or clustering). For instance, I would assign serial number 'C3IV1' for the first interview obtained for case III, 'C3IV2' for the second interview for case 3, and so forth. I also embedded the link of the labeled interview transcript for each serial number, respectively, for easy access and data analysis. For analysis comments and reflections in the thematic chart I added a dedicated notes column for major new observations and kept own understanding of knowledge from the interview transcript capitalized in the respective sections; an asterisk (*) and page numbers in brackets highlight important quotes in relation with the interview and where to find it in the transcript (in line with what Ritchie and Spencer propose).

I indexed and coded all interview transcripts in the respective thematic charts per each case. Before that, I made copies of each interview transcript to keep their raw versions. To annotate the interview transcripts, I highlighted the respective passage, added the theme and subtheme number at the end of the passage (e.g. 1.1, 1.2, etc.), and transposed the passages in its paraphrased and shortened form into the thematic chart excel; I added analysis comments or cross-references with other interviews in square brackets, where necessary.

For the questionnaire-based data that I additionally obtained in case III (unlike cases I and II) I first generated the excel (cvs) file out of the Google Forms surveying tool. I then familiarized with the data by reading through all responses per question. I annotated respective question sections in the excel document via comments in the file: this helped synthesize main insights *across respondents*. I then transposed the insights from the survey excel file equally into the thematic chart accordingly per theme and subtheme, with cross-references where to find

them in the main google survey excel with the raw data (respondent number, column number).

4. Findings analysis

In this PhD research, two interview-based and one practice-based case(s) in the international policy realm are used to learn how design practices help identify and create public value. This chapter presents findings from these cases. The main practice-based case subsection also describes the participatory design practice deployed. Literature analysis (objective 1, chapter 2) showed that design practice helps collective value emerge from individual value associations. Design practice supports externalization and assemblage of subjective value connotations. This section focuses on objectives 2 and 3, the mechanisms of design practice behind value generation - value identification and creation - in policymaking. It concludes by describing how design practice supports public value in the multi-stakeholder, participatory context of international governance.

4.1. Preliminary design cases

The preliminary two cases, EU Commission and World Economic Forum, aim at developing *a first understanding of design practice in international policymaking and, additionally, assess its (design's) relevance in the international context*. Points interrogated were: the hopes for design practice/thinking in intl. policy, i.e., why is it needed; what design practice/thinking is in intl. policy; what the locus of design practice/thinking is, i.e., who acts through design in intl. policy. (Consult methodology chapter 3 for details on the research design.) The findings are presented in the same order - why design (relevance), how design (practice), and a glimpse into who designs (actors).

Through cases I + II it is found that, by bringing alternate lived realities into policy content creation, design practice in international policy bears the potential to extrapolate policy end user needs and realities to make them identifiable for the context of policy decision-making *(relevance of design)*. What design can bring to the table is showcasing and proposing

examples, ideas, and narratives about what value is required to be generated through policy, for whom, and how it could be operationalized *(practice of design)* - thereby activating, legitimizing, and collapsing old and/with new agents in the international governance arena *(actors co-designing).*

4.1.1. Relevance of design in intl. policy-making context: Closing actor (inclusion) and knowledge (awareness) gaps

Design proposes to extract relevant (at the level of people/actors) and forward-looking (knowledge/content level) information to otherwise blind spots or evolving gaps in today's international (intl.) policy-making context. This gap-filling needs to take place both at the actor and the knowledge level:

C2IV10[48] Lead in AI/ML, and C2IV11, C4IR Government Engagement Lead, both address how the C4IR creation itself is closing gaps at international level: IV10 states that the *"creation of an AI Strategy"* - aka a policy - or of an AI Center as such - aka the C4IR - helps anticipation and prevention: "*If you create an AI strategy, an AI center in a developing country, you could deal with some of these things of privacy of data and things like that before it gets out of control …*". C2IV11 underlines the role of the Centre as a Forum's natural evolution or legacy in filling knowledge gaps: It, first, lets ideas emerge and "*promotes*" *"a new way of looking at the same problems*" (= filling knowledge gaps). Second, C2IV11 states that the "*Forum in general has a lot of convening power to bring together the people that are the important decision makers in the policy sphere.*" (= filling the actor gap). She specifies how the discussions taking place at the Forum used to be "*very abstract*" in nature and that the Forum can, with the support of the C4IR - and its design activities - get concrete, positioning itself "*as a real innovator in this space*" by using "*specific examples*" developed by the C4IR and by "*really*" triggering the discussion.

Creating a particular locus or space - like the EU Policy Lab or the C4IR - as a new institution or additional actor in the international governance scene brings alternate realities into the policymaking context through which design manifests itself. The former speaks to the main

[48] I number interviews by case, i.e., "C" and interview, i.e., "IV". C2IV1 means case two, interview one conducted. The numbering thereby follows no particular order or prioritization other than when the interview was done.

identified knowledge gap, namely the *Subject-Object* relationship (see objective 1 section 1.4). How legitimized actors (the subjects) make sense of a given policy theme (the object) is what will create value, or at least the perception of it (perceived value). Design practice's value-add in policy is hence that it makes actors and their role with regards to a given policy theme - and thus agency - again center-stage in policy making. Design resurfaces the importance that policy content is dependent on the actors involved in creating it in the first place, i.e., **policy content is a function of the actors' value ascriptions or viewpoints that are being extracted and merged. This goes as far as to the creation of different institutions (for case I, EPL) or the expansion of mandates (for case II, C4IR).** Design is thus inextricably linked with governance questions of **bringing actors in interaction for the production of institutions**. Those institutions comprise new physical locations or actors - like the designing spaces or arenas I chose as my preliminary case studies (EC EPL, WEF C4IR) - or new content and knowledge that is created and that underlies policymaking. Design legitimizes old and new actors to take on a particular - and sometimes different roles and responsibilities - at intl. governance level.

This first piece of the below-presented vignette (Figure 9) (and part of a more extensive conversation with C2IV15) hints to the fact that the actor-and-knowledge-gap-filling evolution is less planned than organic and incremental. It grows with the changing context of international governance itself, and the needs of the actors that form it. - One need has become to fill policy knowledge gaps, i.e., creating and, notably, co-creating content for policy: Case II shows how knowledge is created by converging actors, i.e., by a community. Knowledge for policy is created by converging actors or the community in a particular way *("in some way"*, as Meynhardt called it, see theory section 2.1.2), for cases I and II in a design-led way; case II also shows that the evolution towards "collaborative work processes" happened in steps: From convening actors, to a dialogue, then to a communication platform, and then to its multi stakeholder format or "partnership model" fifteen years earlier, as a long-standing employee and interviewee explains (see vignette below). Resources were secured as the model obtained actors' value ascriptions, i.e., legitimacy, through industry - and presumably - government partners:

C2IV15 said that the Centre was the logical consequence of **the "structural evolution of the nature of the Forum"**: "The Forum started out as a **dialogue platform"** [in the 1970s], with a "Business-government series of convening", which **turned into loyalty,** and **then into a community**."

The "insight" from the former evolution was that, at the Forum, the "business-government interaction works well, yet **we need a coalition to do things**". Hence **the Forum's "business model" was "created" with "industry partnerships as portfolio projects".**

"Today, over [half] of the members are partners meaning the model must have been "successful", it "speaks for itself". Today, there are 70 projects, across 14 initiatives [Spring 2018].

When I ask "How come the partner model was set up?" C2IV15 states that they witnessed that there was that business model behind which people would pay for "such kind of service" under which **"the Forum was turned more into a knowledge organization** than remained a converging/community management organization."

He explains that the Forum knowledge work started to become policy work that would fill gaps [My question: 'How come policy work was integrated into Forum core operations?']:

"2010, after the financial crisis, a global initiative/"uber-initiative" was set up to identify 'What are the gaps in policy?' It was set up as a thought process around the Global Agenda Council; a final report was released in a summit in Doha (at which consciousness for the multi-stakeholder, intergovernmental approach was developed); all this added to a "new geometry", as C2IV15 explains.

Altogether, **"[a]ll of this was an experiment.** We **didn't know whether companies would find value in that**." [that = policy-corporate cooperation].

Figure 9: Design as a process that transforms international governance: How it endows and transforms globally operating actors with additional legitimacy

The C4IR is the "forward-looking initiative" (based on the interviewee`s statement) in the evolution of the WEF and the international governance context that the interviewee described as *"regulatory bodies running behind emerging tech"*, in a world that *"need[s] an informal space to talk about it".*

The same dynamic repeated in the context of integrating design into the Forum's policy work as part of the global governance context, in the form of the setup of its Centre/C4IR: It all started (again) with Klaus Schwab, the Founder and Managing Director of the Forum, who put the intellectual framework together with a book published in 2016, on agility and the 4th industrial revolution 2016, with one core argument of how "politics was lagging behind tech". A "coalition for purpose" was put together, i.e. discussions with global CEOs plus discussions in strategy meetings. That the Forum had no "protocol" to follow - as an EU Policy Lab or EU Commission would have to, i.e. a formal international treaty-based mandate, helped, as it - as C2IV15 states "adds to innovation".

With the Forum's gradual evolution into the C4IR and a design-led approach, its business model evolved as international actors acknowledged its policy work as crucial for regulating new and emerging tech. These actors valued and legitimized the Forum's plans, including its design approach. Consequently, the Forum addressed a knowledge gap in international governance, particularly in regulation and emerging tech, by bringing actors together. This aligns with the Forum's established role as a convenor in international governance. The C4IR created a space to address global policy knowledge gaps through design, with the latter both legitimizing and orchestrating international institutions involved in co-formulating policy.

4.1.1.1. Identify (with) new realities

Data reveals that the hope for design in policy is to create meaningful progress - meaningful "reality" - for humankind. That is, to set a vision and enable practically ("in reality") a good life for a wide set of the population (= inclusive vision of society). Interviewees allude to how envisioning what's meaningful for society is set in a particular and altering public sector context in which the role of the public sector itself is acknowledged as changing. In this international governance context, design unfolds as a relevant and practical instrument:

C1IV1, high level official and Strategist and Senior Leadership Advisor to the EU Commission shared that we were in an era of "*reinventing public services*", holding a tendency towards experimentation rather than perfected practice. In the context of public sector evolution, she recognizes as important to include *"realities"* of additional stakeholders, beyond the ones integrated so far, given policy faces a more heterogeneous society: We live in *"an era of countercultural pushback*" in which we need to ask ourselves *"what is truth*", how *"evidence is framed by the context of the elite [...]"*; whether we do *"enough of impact assessment*", e.g. to "*know what works*". Just as C1IV1, C2IV11 adds how important it is to create practice over purely theory (compare also C2IV17 or C2IV15) in today's *"complex"* but also technology-driven reality, that comes with a multitude of heterogeneous perspectives. She underlines working with "*real life*" in a heightened "*complex*" world as essential, hinting to how the C4IR (case II) is a pilot in itself that gives rise to questioning practices and being more *"out of the box"* than *"Geneva"* (i.e. the World Economic Forum itself): *"The Centre is, I think, in a good place to challenge some of the status quos and to be more innovative and think more out of the box than what we do in Geneva, because the whole thing is that it's a pilot, and that the lessons that you learn from the pilot are more important than the results of the pilot. Meaning*

that if you have a pilot and it fails then you can learn as much from it in terms of what are the learnings that you can share in the outside world than when your pilot is a huge success."[49] In this context, she mentions, too, how the Centre plays a role in linking and learning from technology for society and its equilibrium overall: *"I think also technology is often seen as a big divider, rather than something that brings more inclusion or equality. So I think there as well, the Forum is in a place to do something that proves or rejects that kind of statement. Why I'm most excited about the Centre is that the models for doing governance in a different way can not only be applied in technology setting[s], but also in a social setting. And you can experiment better in a technology environment now, because there are just more resources to apply to it. So that's where, I think, the Centre could play an important role in being more creative, being more open and more inclusive in the project* [...]".

C1IV17, a professional in public sector transformation at the OECD, specifies how the idea of society of tomorrow needs to be made tangible, and tied to realities, notably the building of a different kind of *"identity"* or, as she says, "*a different way of building your identity. [...] Some of this hits on that personal level because it is about how people think about themselves. And when innovation hits there you're challenging some pretty deep stuff.*" C2IV4, a junior fellow at the Centre representing industry, working on value at stake in digital transformation, speaks of the importance of prioritization and facilitation in decision-making through design interventions: Such *"use cases"* help governments in knowing what direction to go into - thus what visions or ideas of society - to invest in and engage with to scale. C2IV7 states that the former are "*the challenge and opportunity that this whole Centre [= case II, C4IR] is getting at*", including inquiring into *"what are new approaches to regulating [the given theme].*" Calls for reality-embedding and prioritization mean that letting policy be made tangible is to make it identifiable or relatable to the individual.

Another case II project lead in tech (C2IV21, Precision Medicine) formulates straightforwardly that she sees her role in advancing technology under the condition to secure inclusion, i.e. equity and securitization of benefits for a wide set of societal members, namely by "*help[ing] advance precision medicine in a way that's equitable, beneficial across societies.*" C1IV16, a counterpart at the EPL and Lead in Design and Digital Transformation, notably working on

[49] At this stage I like to underline that no one in the policy sector produces failures on purpose or is per se risk averse. All the delegates I have met and interviewed, be they designing project leads, government officials or corporate decision-makers, aim to succeed. This, in my opinion, disqualifies the entire failure rhetoric AND risk aversion theory around introducing new tools in policy (see paper (Tonurist, Kattel, and Lember 2015). Further research is needed on that angle.

Blockchain, states that design has the capacity to enable future thinking - thus to envision - while at the same time making technology - and thus current reality - accessible: "*Design and future thinking*" complements parts of understanding how technology can work (and its practical implementation): what could be "*[the] future applications, risks, and benefits*" of technology in use or of applied technology in society.

In case II, the Drones & Autonomous Airspace (DAA) project fellow, C2IV2, explains why Rwanda was chosen to craft new visions for global airspace regulation. She highlights that Rwanda's unique relationship with drones, where people are less aware of their military background, offers a "relative advantage": *"unlike where people associate drones and the military and are well aware of the history of drones, [...] people don't necessarily know so much that military background. [...]".* The DAA project lead, C2IV7, links society's priorities to the project's goal of "*accelerating the adoption of drone technology*" to "*maximize societal benefit and mitigate risk*"*: "it forces an interesting discussion around things that we often don't like to make explicit, like what is the value of a life [...]"*.

The DAA lead (C2IV7) clarifies that technology policy shares the same contextualization challenges as other policies. Key questions include integrating new systems into societal contexts, anticipating consequences, and prioritizing to maximize societal wellbeing. C2IV7 emphasizes incorporating autonomous systems into society and the global commons and highlights how small-scale policy interventions are crucial for international governance: *"[T]he belief [is] that the technologies being developed for drones are actually going to transform all of aviation."* She views the project's role as ensuring the safe use of airspace and engaging civil society on their concerns: *"[...] I'm not sure the government historically has been good about circulating the benefits of an emerging technology"*.

Governing today, predominantly shaped by an age of (emerging) tech, shapes how decisions about society and policy are made. Design offers a tool to hedge against the loss of a variety of viewpoints or identifiers of future (reality) potential. Like this it bears fruit for reliable and meaningful policy visions. Collapsing diverse viewpoints - or "realities" - helps solve policy content creation and address policy issues, as detailed in Figure 10.

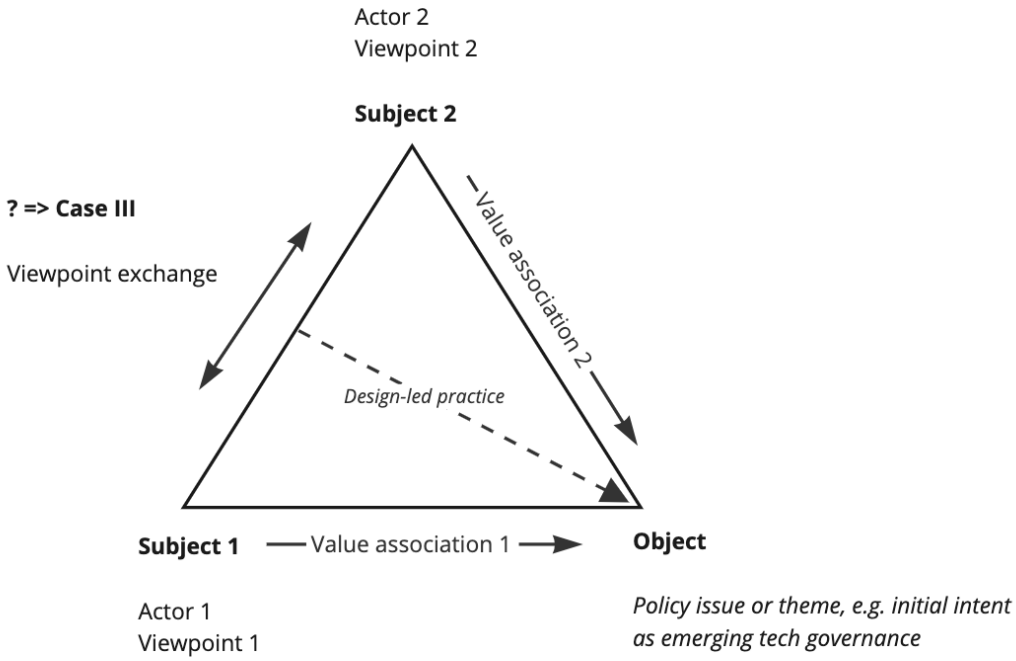


Figure 10: Actor and knowledge orchestration (expanding the subject-object model of value)

4.1.1.2. Extrapolate (from) existing realities

Policy is traditionally removed from its vertical recipients - its "policy (end) users" - and thus realities, that let *extract* viewpoints or needs from a given individual's context or given realities.

C1IV1, Strategist in Innovation and Senior Leadership Advisor in EU Commission's strategic policy team,[50] explains how policy is detached from its recipients and thus their realities which does not facilitate extracting viewpoints or needs from a given individual's context in the first place. C1IV1 hence addresses the link between the remote and theoretical production of policy on the one hand and the lack of introduction and capturing of vertical realities in policy

[50] This interview was undertaken during the Juncker Commission, which hosted a strategy advisory group called EPSC, European Political Strategy Centre. Given their strategic orientation and this inquiry into design as a strategic rather than operational tool this group bears relevance for the study.

(leading to blind spots) on the other. She states that policy is in "*a very comfortable place*" as "*we're just producing papers carrying words which describe theory.*" Instead, "*ordinary people are closer to reality.*" Paradoxically though, she also underlines that she sees in policy an ***"executable"*** *[own emphasis]* vision of societal future, which must be action-oriented: *"Making policy is to create an executable vision of a better future for your constituency.*" - What are better futures is open to debate and subject to tradeoff: Executability of the (policy) vision needs to be assessed as much as the "*necessary tradeoffs*", i.e. *"the pluses and minuses"* need to be made visible "*at collective level*"*: "[I]n a mature democracy [...] the vision has to be executable, and it has to be conceived in a way which makes explicit the necessary tradeoffs. Not necessarily in terms of winners and losers - they'll have to judge themselves about that - but in terms of pluses and minuses at the collective level."* - The interviewee goes on*: "So you have to be around action not around talk. And it's quite rare … you can have action as an alternative to legislation, or upstream of legislation or downstream of legislation, in which case the action can be "are we executing the law right, how are we interpreting the ambiguous bits in the light of evolving needs". I think around policy and law it has to be more real to engage people than if it's just bureaucrats."* Policy must be action-oriented. And while policy officers and horizontal governance actors - those making the decisions on the "words" or "theory" (the content) - might get excited by those words or "pure" policy, "ordinary people" will not profit from policymaking that is detached from them.

C1IV1 equally denotes the importance of including realities on the ground, in particular in emerging policy issues, i.e. the issues policy is yet to be designed for. There's a need to fill in blind spots, i.e. gaps that an expert cannot identify as they are looking at a theme differently: "*[...] the more emergent the set of issues, the more relevant the wisdom of the crowd or any other ordinary human being can be. Because they're gonna spot things that the experts are not spotting 'cause they're looking at it in a different way."* The more emergent the set of issues, the more important it is to involve actors to fill in the blanks.

Integrating wide realities would create a real outcome in policy, and hence again create impact that is value-based. C1IV17, senior OECD delegate, explains: *Interviewer: "A more general question: What is innovation in public policy?" Respondent (C1IV17): "The definition we use within the latest OECD reports is around: It has to be novel, it has to have impact, it has to actually be done to something, [...] I mean there are a lot of definitions about innovation, but inherently, it's contextual. It is new, there's a tendency for it to be associated with just good things, yet in public sector, what is good is inherently a political question, it's one of*

values, [...] Inherently though, it's not about doing the same thing better, it's about doing something differently, to get new outcomes [reality/impact] [...] and you can't make people take shortcuts on that journey." The value from design in policy is hence its multi-stakeholder inclusion that transforms into - or leads to - strong vertical integration, thus expands political or value-based discussions with end users, notably their "realities" i.e., needs and context, to - secondly - create an impact, i.e. do something to someone.

C1IV5, EPL Lead on Inclusion, Identity and Social Cohesion (specifically regarding a migration project) explains how their role in design and as the EPL is to "create" a particular "context" and facilitate a different kind of discussion that enables a greater pool of stakeholders to look beyond their own viewpoints, needs, and implications: *"I was trying to look for an entry point on migration [...] to really facilitate a sort of different type of discussion [knowledge] on migration in the Commission or an engagement with different stakeholders [actors] to allow people* ***to create a context in which people think a bit further*** *in terms of, you know, beyond the current crisis to look further on what the needs of the EU and what the implications of the global migrations patterns might be for the EU in the future."* Similarly, C1IV12, an EPL lead on Sharing Economy, Future of Work, and Digitization explains how such vertical integration and "smaller scale design interventions" seem underestimated in policy, both in terms of forward-looking building capacity of society ("cultivate a more prosperous society") and in terms of impacting ("touching") and hence being relevant to policy recipients. *"It goes back to what I said in the very beginning: If, at the policy level, you have no idea of what's going on on the ground, or you don't wanna know* ***what's going on on the ground*** *then you don't, A, are being* ***a proper enabler for innovation to go further than just at the local level*** *and, B, your* ***policies are completely out of touch, they're not touching the people you're aiming to touch.*** *And then, very often if you try to innovate within policy-making, you get shut down or stopped because there's too much fear of the unknown, or moving beyond the status quo or what this will mean in the longer run. I think there's a lot of talk about it but I don't think we've properly explored how the two actually can work well with each other. [...] small, local-type innovation - can perhaps inspire policy to be a bit more innovative [...] and [be] a proper enabler for innovation to go further than just at the local level as much as impact the recipients you're aiming to touch."* I ask her how international policy and innovation go together, after a more in-depth discussion on design and it being used as a policy innovation instrument: *"I think policy very much overlooks - if it's done properly and in touch with what's happening on the ground - it can be an enabler for innovation to go much further than to sort of the* ***very local level****. But the reverse is also*

true that innovation, even very small, local-type innovation, ***can perhaps inspire policy to be a bit more innovative, or for policies to be a bit more future-oriented.*** *[...]"* Small scale interventions done through innovation instruments such as design are about policy-making learning to go beyond path dependency and at the same time integrating and empowering the vertical and thus recipient end users in policy design.

C1IV22 is a policy officer at DG CNECT, working on Industry and Digital Single Market topics. She explains, in another very practical illustration, how she perceived the designing lab team as a support in her policy formulation process. The design of workshops offered fresh ideas and complemented with additional knowledge: *"This [project's fact-finding process] was very wide, a series of workshops, studies, looking into different parts, entering into discussions. All of this fed into the wider [...] fact-finding exercise, where we could get some information. This built [our] database of knowledge, a common knowledge set amongst us [us as the co-working policy teams, including the Lab]. [...] We knew what the topics were we wanted to get more information about [knowledge gap] [...] because when we don't know we ask people in those workshops [actor gap]. It was very straightforward. They [the EPL] provided some ideas, some of them were very good, how to set up the workshop ... I think it was their idea that it would be useful for us to have discussion[s] in smaller form, the world cafe type of discussions when people move around. There was some good ideas [...]."*

To conclude, today's society and its evolution (under technology influence; see section 4.1.1.1) is interconnected, complex, and heterogeneous, thus holding a great variety of viewpoints and diversity. The former bears a greater potential for knowledge and thus actor gaps to evolve and be overlooked in the policy design stage of policy content creation. At the same time, amongst policy officers in the sample, broad awareness exists about the requirement to integrate recipient realities and their variety. Design is an approach or a "how-to" go about integrating the latter, as findings show, which confirms design as a way of merging different actors' viewpoints (in line with the PhD knowledge gap and proposition, see section 1 Introduction, and section 2.5 Gap of knowledge). In the light of the societal and tech-induced evolution (elaborated on in section 4.1.1.1) it seems logical that vertical integration - thus the integration of end recipients of policy - and operationalization have traditionally been underestimated in intl. governance and for intl. policymaking, relative to the integration of horizontal actors, i.e. other organizations, other policy/political stakeholders, at international level: Perhaps it seemed paradoxical or counterintuitive to believe in the value-add of small scale interventions - as design proposes them - in the context of 'large scale'

issues, i.e. international and globally spanning policy to complex and large problems, as in international technology and global tech policy creation. More and more topical, interviewees put emphasis on forging and generating evidence on the ground, be it to identify visions to preempt policy solutions or to learn from existing realities for current policy issues to solve for and generate alternatives.

4.1.2. Designing 'into' policy knowledge and actor gaps: Reveal the process and practice of design in intl. governance

This section builds upon the former and shows what design practice in policymaking at international governance level consists of when in use: it helps in both identifying new and extrapolating existing realities, i.e., support vision-setting and inclusion (see 4.1.1.1) as much as experimental projects or small-scale interventions that help vertical integration (see 4.1.1.2). The table in Appendix B shows design practice and functions, when deployed both *punctually and thus in the moment* and *in and thus throughout* a longer design-led policy-making journey. It hence provides an overview of the tools, techniques, materials and mindsets at work when design helps anticipate societal paths, build capacity, facilitate decision-making, and prioritize alternative routes, and for creating content in policymaking at international governance level. The table collects an overview of - based on how the interviewees in the preliminary cases described it - both *one-time transactional* and *process-based techniques and formats* that design practice adopts for actor gathering and policy content creation thereof. It synthesizes what the interviewees associated with design practice as it was deployed in their intl. context (in the version of short summaries of interviews from case I and II that Ritchie and Spencer and Ritchie et al. propose; see section 3 Methodology). Both quotes (in quotation marks; when full quote in italics and quotation marks) and verbal syntheses are used to best illustrate the core messages by the interviewees and their statements[51].

One should not read the information provided as an either or but learn to address that a **punctually deployed design tool or method remains a tool used as part of a process.**

[51] For the synthesis of the statements, the methodology proposed by Ritchie and Spencer (2002) and Ritchie et al. (2013) is followed. Short summaries on the core element of interest - being the design practice - are presented.

This means that techniques and tools used are e*ssential for the process and outcome* and moderate the journey of design-led making of policy and actor-knowledge-relation punctually *and* throughout. Take, e.g., the use of sticky notes to enable continuous feedback sharing and capturing (C2IV10); or the use of toolkits, or the process of rapid iteration (C2IV1) that requires initial scoping. Respondents sometimes describe the mechanisms or design process through relatively common design language (e.g., sticky notes, storytelling) or language about tools used; this indicates that a certain awareness of design elements - albeit not attributed to necessarily design practice (but the social sciences, for instance, as C1IV12 or C1IV16) - was already available at the time of running the interviews. C2IV2 talking about *"storytelling"* or C2IV7 about *"leapfrogging"* indicates a new addition to how design is being thought of in policymaking in the intl. governance realm.

What design can bring to the table is proposing and showcasing examples, ideas, and narratives about what value is required to be generated through policy, for whom, and *how* it could be operationalized ('smaller-scale interventions'). To make the former identifiable with, design practice deploys diverse techniques, instruments, and materials *punctually*, to surface otherwise unexpressed viewpoints. The latter can range from storytelling (recall, e.g., C1IV26) to post-its (e.g. C2IV10) to empathy cards ("persona cards") or pictures. C1IV26 explains how three persona cards were used "to bring in people" - and thus policy user lived experience contexts - in an interactive, roundtable-like design-led format. Design practice also makes explicit and generates signals *throughout* implementation (e.g. impact stories or policy pilots), in which it enables perspective switch and roles, and thus change of viewpoints *in real time and throughout the policy-making process*. Design practice thus complements bounded perception of reality (directly) for content creation and (indirectly) for decision-making on that content (see e.g. C3IV13).

Design's value-add is thus viewpoint-switch and gap-closing, by deploying techniques, tools, and meanings that force out of traditional ways of thinking, to work towards integration of alternate realities. Design's tools capture thereby lived experiences and allow to create sensibility around them. C2IV21 makes the purposeful expansion of her rationale or mindset explicit and describes her design practice: *"The [practice] probably varies based on the pilot, but, a couple of the key things we look at. So I, my mindset, since I'm working in health, I try to think of the patient journey because to me, the patient's the most important part of all of this. [...] [I.] think about how she [the patient] goes through the process of interacting with the [healthcare] system [...] and then I started mapping [II.], like, every, every other group that*

might be involved in that and then I [III.] work with other stakeholders to kind of get the idea and look for any, any gaps that were missing. Or any kind of other groups." The rationale C2IV21 deploys[52] is summarized and illustrated below (Figure 11) by using the markers I, II, III.

C2IV13, Design Lead at the New York Public Policy Lab, synthesizes what one can consider advanced ideal design practice approaches in policy: From her, and in combination with the insights presented in the Appendix B table, it is found that: First of all, design practice's facilitation of **capturing alternate viewpoints and** of **vertical integration** - **i.e. "inquiring into the "actual" and "lived" "experiences of individuals" -** is a **"productive" kind of empathy.** That productive kind of empathy or filling of knowledge gaps towards a more inclusive and equitable society is the overall direction that all interviewees speak to according to the findings presented in Appendix B (e.g. to "work with stakeholders" or "get an idea to"; to "spark conversations"; "real listening"; "journey mapping"; "policy as a service", etc.). Figure 12 below aims to illustrate how the lived experiences - and thus actor realities - are integrated through design practice in the existing rationale of policymaking (inspired by the policy cycle stages agenda setting, policy formulation, implementation, and evaluation).

Bounded knowledge is complemented continuously and throughout the process of design, by creating spaces that let integrate and surface alternative realities or *"different kind of life experiences"* (C2IV13). **The former can happen through *"journey mapping",* and, most importantly by deploying in practice the mindset of *"policy as a service"*: I.e., the policy text or 'instrument' - as the verbalization or formulation – becomes, in design-led policymaking, the prototype.** This means that policy (and policy formulation as the policy cycle stage) becomes a means to an end, not the end in itself. Figure 12 illustrates as well: Lived experiences are integrated (vertical), policy becomes the prototype (horizontal, i.e. for decision-making).

All in all, asking - e.g., through policy journeys or service journeys - who the user of policy is, receives new weight when policy is created by design: orchestrating all actors involved around that particular "policy end user intent" or "policy end user service orientation" becomes front and center.

[52] Recall that C2IV21 represents, together with C2IV2 and C2IV7, the projects that are most advanced at case II at the time of data gathering.

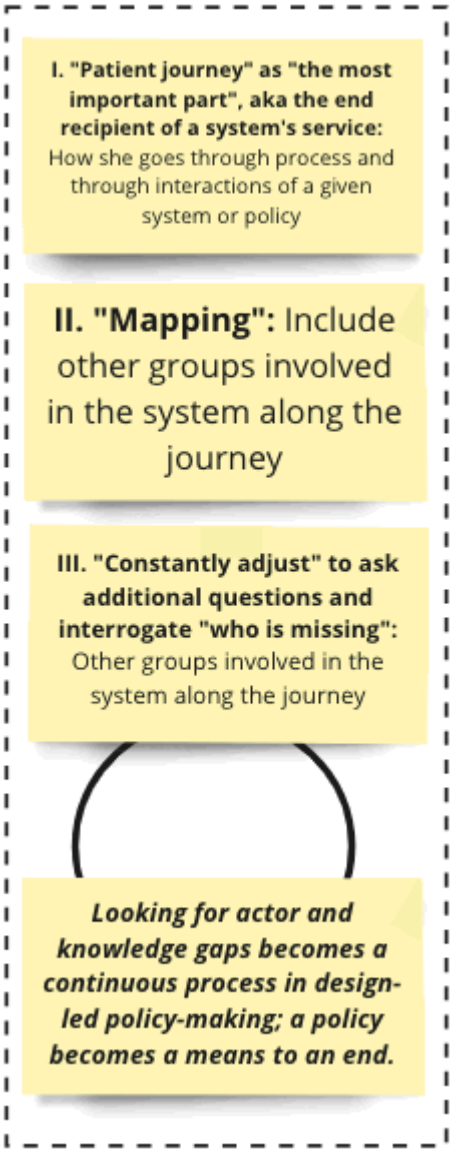


Figure 11: Including actors in design-led policymaking, to close knowledge gaps: point-in-process and throughout.

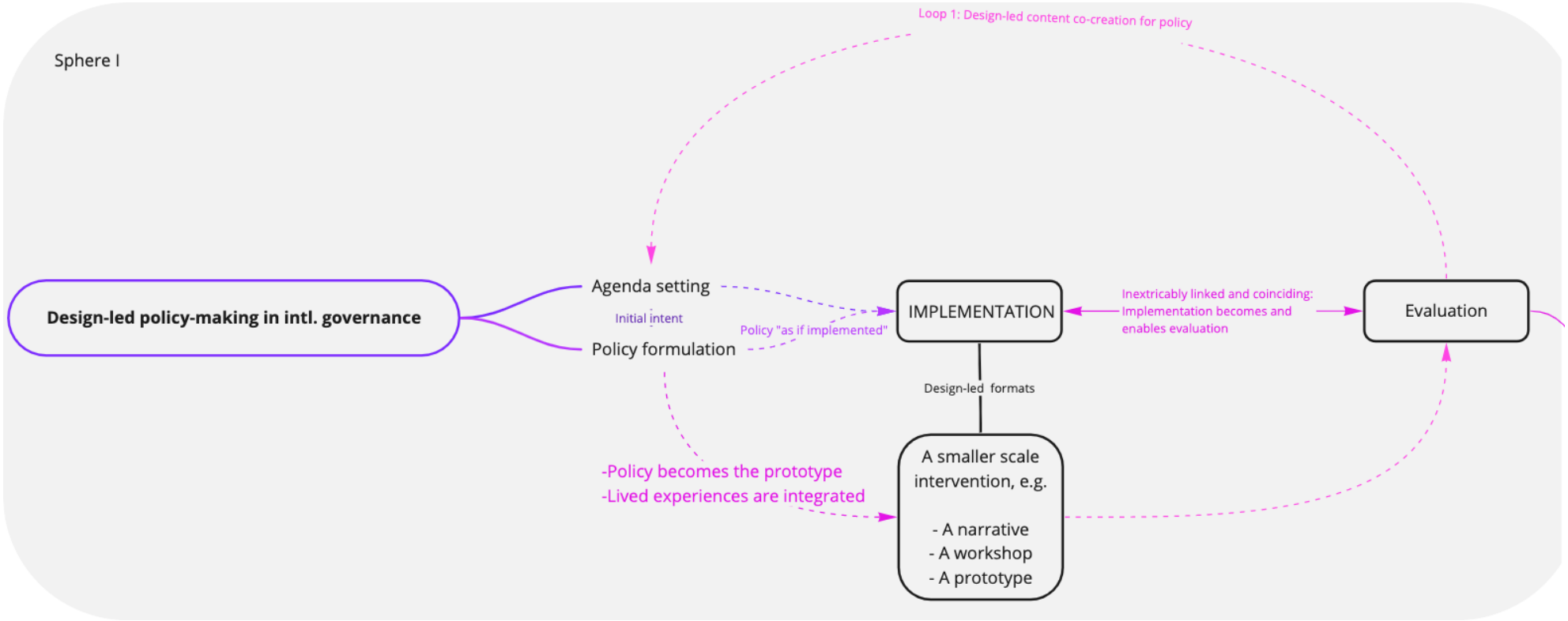


Figure 12: Design-led policy content creation that is “policy end user centric”: Lived experiences are integrated (vertical), policy itself becomes the prototype

4.2. Conclusion preliminary cases and outlook (for case III practice)

The preliminary cases showed that, in the context of international governance, design is applied for making valuable and thus meaningful and broadly integrative policy that addresses both policy knowledge and actor awareness gaps. In policymaking at international governance level, it is not just about the design tools deployed themselves: Findings draw renewed attention to the fact that the currency of governance is *relations built and that relational knowledge obtained*. On the other hand, public value is not a function of such legitimacy, capability, or (initial intent) legitimizing actor values only, but one of *the practice that is deployed*: It is, in fact, the practice that is the binding link between the policy topic to create for and the people that is created with and that design "orchestrates". **Thus the public value triangle is not a function of legitimacy or capability or values only, but one of practice that the designing facilitator and policy manager(s) and other stakeholders deploy (when policy managers) or underlie (when participants).** This puts the role of *the practice of policy-making* center-stage, thus the 'how to' - or the bundling the different actors' viewpoints and realities with design-led approaches - over merely the actors (the *subjects*) or the policy theory to be written (the *object*).

Through horizontal and vertical actor interaction design (e.g., workshop-driven) and by looking at policies as-if-implemented (e.g., small-scale and experimentation-driven), design practice - by designing *for* and *through* policy - is ascribed to identify and extract a given number of realities (Rn) that are contextually representative on the one hand and forward-looking on the other (see Figure 13 below). In that manner, design practice sheds a light on the most strategic element in governance, as it helps fill blind spots and evolving gaps in today's international policymaking through real-world inclusion of multiple individual actors' viewpoints - and thus designs *into* policy.

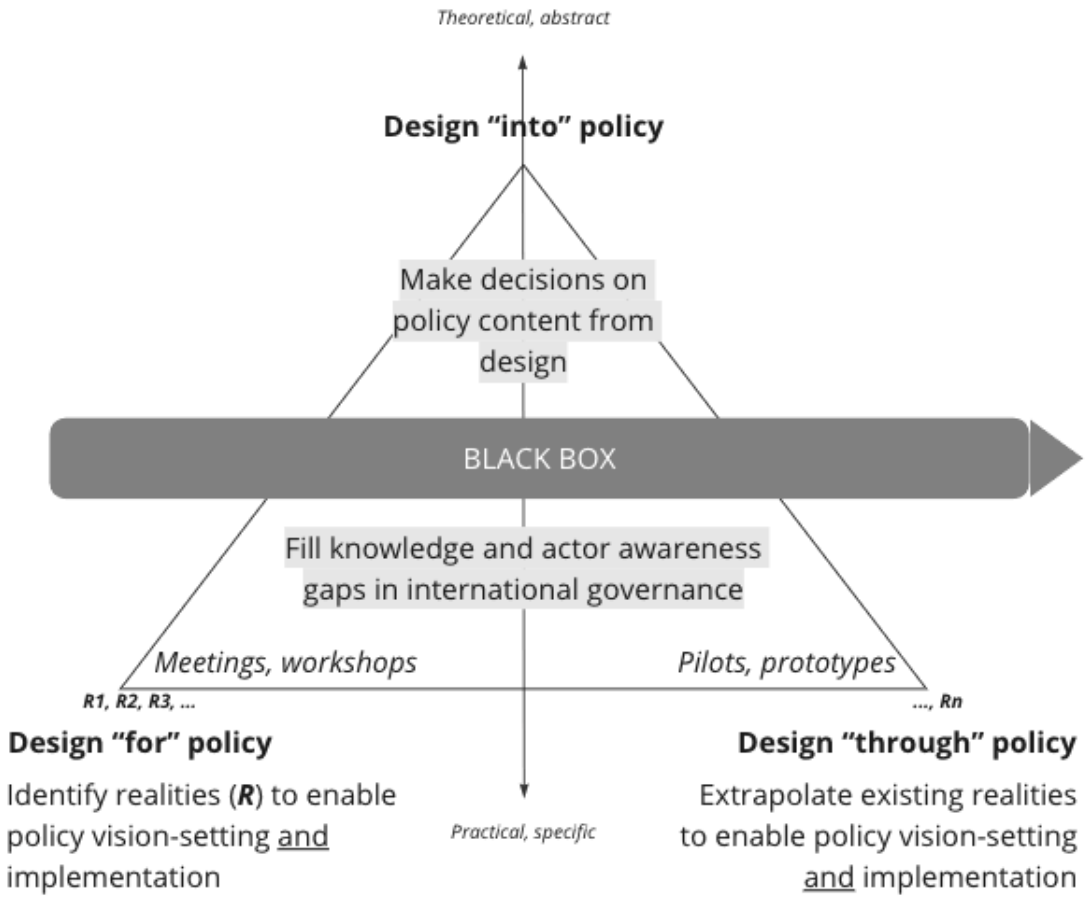


Figure 13: Design's value-add as closing knowledge and actor gaps at intl. governance level - Bringing actors together to think policy anew and ahead on the one hand (identify) and doing policy in a new way by prototyping or showcasing (extrapolate). Both serve generation of knowledge, i.e. policy content. Own illustration; inspired by Frankel and Racine (2010) and Tieben (2015)

In today's digital age, in which information gets ever more heterogeneous and abundant, design is hoped to enable decision-makers to understand capabilities of technology or policy and incorporate them to let a meaningful societal state - or (temporary) equilibrium - evolve. Design is expected to help bridge policy knowledge gaps - whether in the governing of policy or technology - through the facilitation of decision-making, e.g., at agenda-setting stage; through the prioritization of alternative routes, at implementation stage; through the capability building of decision-makers and anticipation of potential societal paths, at agenda setting and policy formulation stages. By engaging a vast stakeholder base in the design-led process, design practice ensures that policy content is informed by a diverse range of perspectives and insights.

Both workshops and prototypes hold functions to evaluate a policy "as if implemented". Design practice performs thus entirely strategic functions regardless of the sector (whether

public or private) and across all stages of the policy cycle: See Figure 14 below, in which policy implementation and evaluation stages are simulated through design. Agenda setting and policy formulation merge and act together to anticipate implementation; they thus act as a tool to implementation, whereby implementation serves evaluation. Note that implementation and adoption may not be confused: Legitimation of a policy proposal or adoption (aka decision-making upon policy content) remains done by politicians. Design is thus active at the front-end of the policy-making cycle already, and 2 spheres seem to arise, one to design policy content - thus designing into the knowledge gap with the appropriate actors (lower part of the triangle in Figure 13) - and one of deciding upon the designed policy content (upper part of the triangle in illustration Figure 13).

We witnessed, in the previous section 4.1.2, design practice's very integration and inclusion related orientation on the one hand and the continuous and prototyping-iteration approach on the other (see left and right column in Table B1, Appendix B, respectively). Design practice deploys diverse and alternate techniques, tools, materials to surface otherwise unexpressed viewpoints **as points-in-process *and* continuously throughout**: Through service journeys, prototypes, workshops, interactive roundtables, flip charts, small group conversations - even post-its - both heterogeneous and bidirectional, circular interaction and exchange flows are secured; through policy end user and peripheral mapping, design practice also makes explicit and generates signals - rich, inclusive data - for meaningful content "throughout" implementation *("iteration*", *"policy pilots").* Switch of perspectives and roles are in-built in those "living" policy outputs (white papers, case studies, laws), which offers a chance for designers, recipients (clients) as much as recipient-facilitators to overlay their viewpoints gradually, to create new knowledge but also new actor integration.

Moreover, design practice plays a crucial role in closing the actor awareness gap. It brings together decision-makers, policymakers, and stakeholders, allowing them to collaborate and co-create policy solutions. By creating spaces and institutions like the EU Policy Lab (EPL) and the World Economic Forum's Centre for the Fourth Industrial Revolution (C4IR), design facilitates dialogue, engagement, and the exploration of alternative visions for society (through small-scale interventions). These initiatives aim to promote a new way of looking at policy problems and encourage decision-makers to consider social themes in their decision-making processes.

The integration of design into international governance transforms the landscape by endowing globally operating actors with additional legitimacy (as made clear through section 4.1.1 in particular). The evolution of institutions like the World Economic Forum and the establishment of the C4IR demonstrate how design practices have enabled these organizations to fill the knowledge gaps and address the regulatory challenges posed by e.g., more socially inclusive approaches/thinking or emerging technologies. Design has become a legitimizing factor that supports the formulation of policy proposals and facilitates the orchestration of actors in the realm of emerging tech governance. Thereby, already at the initial intent stage, the actor coalition is primordial: The actors involved legitimize the intent, the design-based approach, and are the start to defining a value-informed point of departure and success metrics (at the start and throughout).

In conclusion, design is relevant in the international policy-making context as it closes both knowledge and actor awareness gaps. It ensures that policy content is informed by diverse perspectives and enables collaboration among decision-makers and stakeholders. By integrating design practices, institutions and initiatives can address emerging challenges and create innovative policy solutions. In the case study selection, design practice aids intl. governance in policymaking in two main modes: designing workshops and meetings - to identify (with) actor realities and derive visions from co-creation or capturing of alternate viewpoints (4.1.1.1) - and designing pilots - to identify new policy realities or routes, extrapolating (from) existing ones (4.1.1.2). Like this, design practice in intl. policy, surfaces and collapses obvious and new knowledge and actor (agent) gaps: Reality-capturing tools collect descriptively and tangibly multiple (end) users' lived experiences from/to a policy theory as if implemented. This thus anticipates the user-centric intent AND practical evidence for decision-makers to include into their theoretical or verbal reasoning. Design thus plays a transformative role in international governance by legitimizing actors and facilitating the co-creation of knowledge.

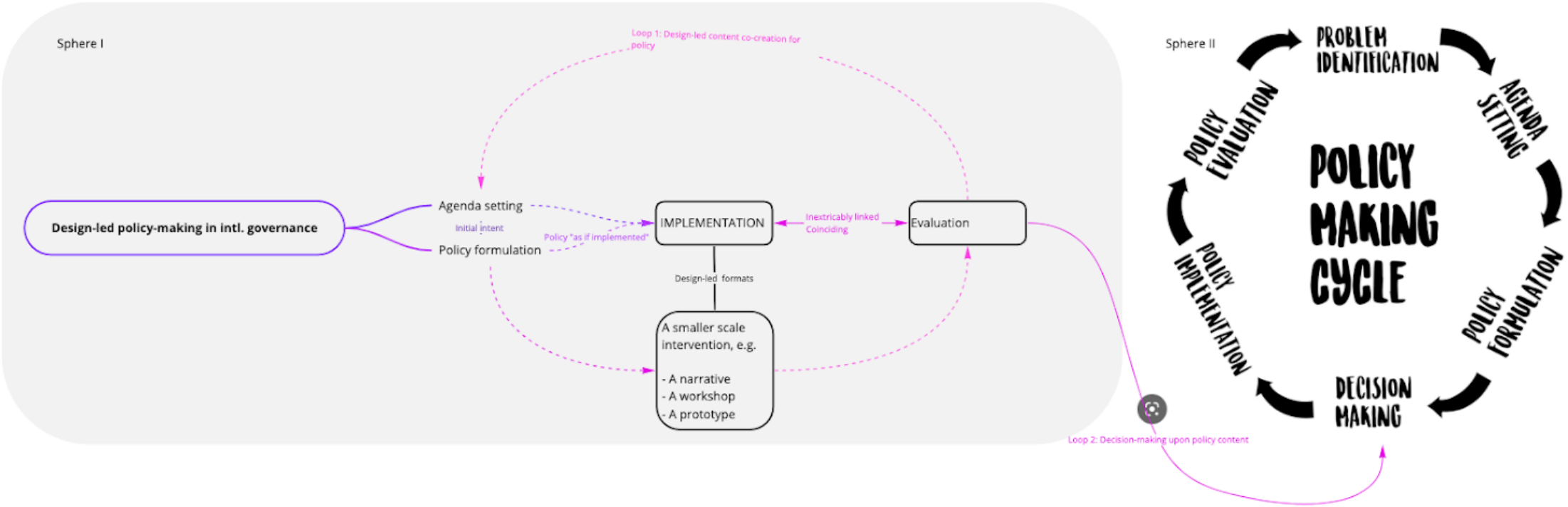


Figure 14: Design's strategic functions related to the policy cycle: design practice's policy content (co-)creation and decision-making upon designed policy content - The 2 spheres of design-led policymaking in the intl. governance context, extending the policy cycle

4.3. Main design case: A worldwide leading tech company's global design-led governance initiative

The preliminary cases (section 4.1) show that design in the international governance context feeds into policy's knowledge and actor gaps. It is applied for formulating valuable and meaningful policy content by means of assembling actors - from designers to policy (end) users - widely and throughout the process of making. The preliminary cases have shed new light on the importance of *the practice* - the instruments, mechanisms, and mindsets - (see section 4.1.2) deployed when orchestrating actors for content by assembling from their viewpoints. Based on the preliminary cases one does, however, not yet know enough about *how exactly* design practice generates co-owned - thus public - value by merging from diverse, individual actors' (e-)valuations. **The third and main case hence investigated the process and the product of design, by conducting a participatory design project in order to reveal the practice of design in international policy and its contribution to generating co-owned, thus collectively held, public value** (see methodology section, notably 3.2).

The practice has supported global public policymaking as it relates to automated decision-making (ADM). As the lead designer on the project, the researcher has conceptualized and crafted, led and fully piloted, and scaled the dedicated design practice behind it. Implemented as a first design-led pilot in 2020, the project had grown into a fully-fledged program with a dedicated brand and dedicated regional presences globally to contribute to the governance debate in technologies by means of design. The researcher asked for research access while still actively the design lead and manager of the project. For the detailed rationale of why the case was included refer to methodology section 3, subsection 3.4, overview of the research settings. This section focuses on the design practice, how it came together, partially also thanks to previous case experience as a researcher and practitioner, and the rationale deployed as such a hybrid (researching and practicing) design professional in the international governance domain.

4.3.1. Design practice rationale and approach

As the lead designer, the researcher has envisioned, implemented, analyzed, and scaled the approach and built a global brand in practice to what was integrated as case III in this thesis. The expertise the researcher brought into the case was threefold: First, she demonstrated strategy and policy experience in intl. governance, both as they apply to design practice and research - with cases I + II in this thesis being essential to it. Second, her thought leadership and network in prototyping of policy and collaborative governance. Third, her experience in tech innovation and governance, and product, policy, and societal innovation more broadly. **Her task, the design brief derived from conversations and introductions - and hence opener for the creation of the underlying design practice investigated in this dissertation - was to develop a go-to approach to test AI (artificial intelligence) regulatory proposals prior to roll-out, through collaboration with a multitude of stakeholders in a given geographical region, notably government and private sector ones (startups and incumbents). The result aimed for and hence product of the design process aspired to was to generate recommendations for both product and policy development and decision-making, and thus governance as it applies *to both product and public policy*.**

The design practice aimed to:

- Involve tech companies as policy recipients or "policy users" (product design/UXR)
- Enable in-context research to capture policy experience as (i) a day-to-day element and (ii) as part of product development (go beyond consultations/one-offs)
- Allow for policy to be tested in chunks and multiple touch points (in-point and transactional) and as a journey (throughout and interactive) - compare Table B1 in Appendix B
- Deploy mobile ethnography (ME) as go-to community and engagement tool and multi-stakeholder and expert meetings and workshops to capture feedback from which to distill, nurture, and iterate insights for policy

Through the researcher's practice under case III she finds that design practice in international policy builds and manages relations that lay realities and value associations open that remain otherwise non-, under-, or misrepresented in the individual perception and decision-making of any given actor or counterpart.

4.3.1.1. Purpose and vision of the project

Case III and simultaneously the main case investigated in this thesis is the practice behind a design-led initiative brought to existence by the researcher and supported by a worldwide leading tech company.[53] The key purpose of this initiative, globally present and operational since 2020, has been to better link product makers and policy makers in order to propose more effective solutions for policies that guide new and emerging technologies, notably AI/ML-driven or digital ones. **Testing policy and its provisions in new and emerging technologies before rolling such provisions out, was considered particularly promising under this design-led policy initiative**: **Recall Table B1 (see Appendix) and Figure 12 in which the researcher finds that what are *policy instruments* (e.g. policies, regulatory frameworks, governance proposals) *as outputs or artifacts* in "conventional" policy-making turn into *policy instruments as a means to inquire - or 'prototypes'* - in a design-led policy-making practice.** Adopting a more practice-based (product design) stance, such an iterative approach, would help learn for product development (both internally and for the industry) as well as contribute to and inform policy creation and adaptation in the new and emerging tech realm. As can be deduced already from case II, the World Economic Forum, the wider global context and governance trends have pointed to and emphasized the need of building policies in new and emerging tech (4th Industrial Revolution Technologies) in a more *"agile"*[54] fashion: An agile approach to making policy would be more apt and responsive to the generally considered *'faster'* product-building and product innovation cycles in the technologies of our age[55].

Another aspiration for the program was to help explore comprehensively pathways, means, and mechanisms for a 'how-to' regulate: No one had dealt with regulating AI in a legally binding fashion before; and until 2021, no (national or supranational) jurisdiction or government had provided a fully-fledged law - or at least a proposal to the former - that would regulate (legally binding) the technology at scale. - The EU published, in April 2021, its 'EU

[53] The researcher, in order to investigate this high-level program, needed to commit to anonymize both the organization and the program based on which the design practice is being investigated in line with her study objectives.
[54] See World Economic Forum 2018 and refer to case II for a more detailed analysis on the matter
[55] In her capacity as an independent researcher, the researcher is not in the opinion that policy cycles should adapt to ever-faster product development cycles. What one should ask is, too, whether product building needs to slow down and what the right pace of co-development between the two would be in general.

AI Act', a first Proposal for the Harmonized Regulation of Artificial Intelligence[56] and a year earlier, in February 2020, a 'White Paper on Artificial Intelligence: a European approach to excellence and trust.'[57] Other than that, international organizations or committees formed at international level had proposed Ethical Principles or best practice guidelines (not legally binding mechanisms but soft law mechanisms), e.g. the OECD or the Council of Europe.[58]

From spring 2020 until winter 2022, the researcher was the design-led initiative's lead designer (until hired by the company's strategy team, due to start a role at the company headquarter). She was managing the initiative from scratch operationally, defining its distinctive, underlying design approach, implementing the initiative in a first pilot, building the overall vision and brand for what became the global initiative, scaling the initiative and approach globally (based on the first pilot), and diversifying the deployed design approaches for future initiatives to be implemented. The initiative was devised as a multi-stakeholder-driven effort (see partnership section further down). - **From my preliminary cases the researcher knew that the initial intent and, most importantly, the actors brought together under that initial intent setting, had a core function in designing into a knowledge and - ultimately, throughout the process of policy-making - also actor gap** (compare section 4.1.2). **That broad actor and thus viewpoint integration played an essential role to policy knowledge creation aware from her literature review (objective 1) and preliminary case insights, notably when identifying with and extrapolating from alternate realities and lived experiences (section 'Relevance of design in international governance' 4.1.1**).

4.3.1.2. The initial design brief

In February 2020, the researcher was approached with the offer to be a lead program manager on what was supposed to unfold as some sort of agile policy-making initiative. She had a demonstrated strategy and policy design background in international governance at that time already, with experience in crafting and rethinking emerging tech regulation

[56] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021PC0206, last accessed 24 Feb 2022

[57] https://ec.europa.eu/info/publications/white-paper-artificial-intelligence-european-approach-excellence-and-trust_en , last accessed 23 Feb 2022

[58] https://oecd.ai/en/ai-principles , or https://www.coe.int/en/web/artificial-intelligence, last accessed 23 Feb 2022

grounded in human-centered approaches and through concrete, applicable design-led methods and tools. The desire by who then would become the manager she would report to was to test policy, however without knowing how to run such a program in detail or implement it in practice. - It was clear that the program should not adopt the style of a regulatory sandbox. - By that moment, the researcher had already been thinking through and been active in policy prototyping. Prototyping was, to her understanding back then, a characteristic element in a design process. - She had tried to formulate what prototyping in policy could mean, why and how it could be implemented. She wrote about policy prototyping and eventually became known for her niche competence and thought leadership in the community that her manager had close ties with, which is why her profile was forwarded.[59] - Her manager brought some initial visions of how to structure such a policy testing initiative, grounded in his exposure to and experience in legal and governance matters in tech.

The following became the **self-crafted design brief** on which to base the design craft:

- The initiative would be implemented, first as a pilot, as a complementary collaboration based on earlier successful co-work at the intersection of product and policy development with a particular governmental institution in a particular region, referred to as “region A” going forward.
- The initiative, in region A and all other regions to subsequently follow, would focus on testing policy on a particular sub-governance topic in tech that was deemed vital by the stakeholders co-working on the initiative in that region or geographical governance context. Imagine such governance sub-topic in the domain of AI/ML or automated decision-making as e.g., privacy, fairness, or control, or also transparency. These had been the topical matters discussed in the AI’s governance debate globally by 2020 (they still are and often referred to as “Responsible AI”).
- The program would be implemented through individualized scenarios that would be chosen, respectively, by the participating number of interested and onboarded private sector institutions to test the policy. - In essence, the program would thus expose product developers and engineers to policy and regulatory requirements in a test version.

[59] See written work and reflections including a conference organized by me around design and prototyping in policy since 2017 here: (1) https://medium.com/legal-design-and-innovation/in-conversation-with-verena-kontschieder-ba0ae69a2468 ; (2) https://conferences.law.stanford.edu/prototyping-for-policy/2018/10/22/prototyping-in-policy-what-for/ ; https://conferences.law.stanford.edu/prototyping-for-policy/#:~:text=The%20first%20wave%20of%20policy,on%20daily%20lives%20of%20people.

- The host, together with the co-implementing partners (the initial coalition), would moderate and guide the testing pathway; additional partners would mentor and provide subject matter expertise when participating institutions required it.
- The policy provisions, synthesized in a document, would be seen as the 'policy prototype', and tested through the scenarios over a given time frame of e.g., multiple months.

It is important to consider:

The above was the initial design brief for region A, based on which the researcher created:

(1) The first-ever and leading version of what a **design-led testing, aka prototyping, method** would look like in emerging tech policy, for this particular design-led initiative and its global brand launched later (based on successful pilot in region A)
(2) **The blueprint method** (based on region A) for all design-led initiatives globally to be built up in the subsequent months, **including for region B, which is the region investigated in detail as case III in this research**; the **design process would stay the same** but adapt to regional specificities and learn from previous implementations (see next section for details)
(3) **The *global* brand,** its identity and narrative, of the program that the researcher was to co-develop and launch at a later stage
(4) **Multiple new prototyping routes, ideas, and visions** for how prototyping in policy could be implemented differently under the same program brand

4.3.2. The implemented design practice

The main reflections ultimately acted upon in the initiative's design practice were strongly rooted in a product design rationale the researcher had thought about already earlier in her trajectory: *What if a policy is a product, and you are the user, would you buy it? Why?*[60] For testing through the design-led initiative, she thought of companies as "users of policy" -

[60] See a blog post on that from 2014, when the researcher started her first role in policy in the EU Commission. https://gracefullypolitics.com/

"policy end users" or "policy (end) recipients", as she likes to call them. In the initiative, **the delegates of the participating companies as the recipients of the policy in real world and thus testers in the initiative** - be they CEOs, or engineers, product designers - **would not test a service or a product, but a policy, its provisions and the functions of the former.** She used the former wording as *"Imagine testing a product or a service, with the difference that in our initiative, you will be testing a policy."*, given she had anticipated that this kind of description would resonate well in the technology realm. Startups or established companies usually knew about the concept of testing, e.g., be it due to the MVP logic or alpha/beta phase testing.

At a granular level, based on the design brief, she considered the **unique context in which she could establish the design practice in**: Firstly, related to the region in particular, there were both interest from an existing regulatory agency in such an initiative and already established relations with a potential set of participating companies, both due to earlier design-led projects by a sister team in the organization (the projects were product- and not policy design related). Second, and applicable to governance internationally, public and private sectors come together usually to exchange on topics of policy relevance. The researcher, however, was keen to **design *a process* that would enable going beyond such "traditional consultation-like" or "conversation style approach"**: The latter usually **(a) take out companies of their usual day-to-day business or operational context** into a constructed conversation style mode and **(b) ask companies about their viewpoints or to exchange knowledge for a very determined and punctual and *transactional-only* moment in time** (for the duration of an organized consultation or meeting, for instance). The researcher wanted to be able to: make use of and leverage the unique context in which she operated, thanks to the ties and legacies the host organization offered, plus complement the way policy is being done or would usually be done when design-thought practice or vision are absent.

Finally, the additional wish by her manager was for the policy-testing companies to go through personalized scenarios**,** which would enable them to build product or product elements around the given guidance provided through the policy prototype. Such scenarios would be divided into three major phases for the duration of several months; the phases would help (in phase 1) establish basic requisites of implementing new product elements, e.g. what recipient to focus on for such additional product solution that should be developed under the guidance provided in the prototype; then focus on technical (code-based)

implementation of initial solution concepts; finally, the solution envisaged by the companies in phase 1 and 2 would be put into a design as an ancillary service or feature to a given product (new or existing), to ship it to the user. From this brief, it was clear that **the researcher and design lead could leverage the fact that this was a highly process-driven - and thus *relational-interactive* - approach** that provided the opportunity to obtain in-depth knowledge from practical implementation of policy governance at product level. She wanted to surface that component and make it explicit in the design approach. - See the selected notes below shaded from her synthesis to the manager of what and why to choose the particular design approach.

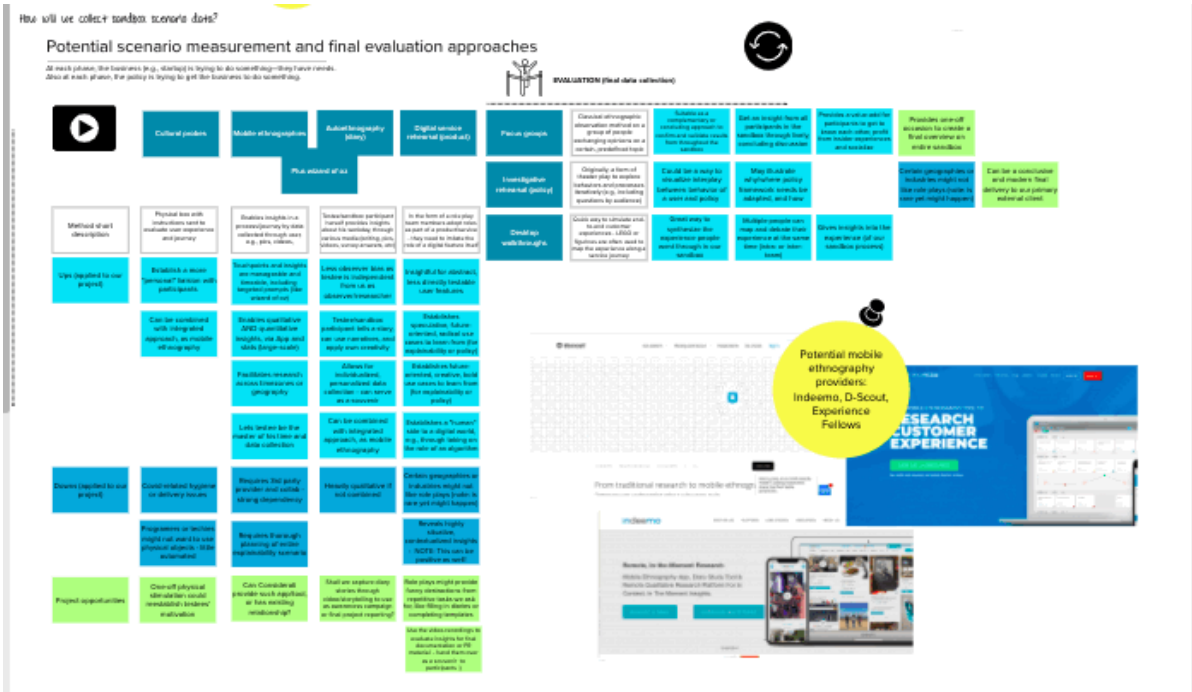
The ultimate approach to test policy that was selected, based on the researcher and design lead's recommendation, was a **mobile ethnography (ME)** approach, that would allow full immersion into the participants' day to day and their context of building the product over an extended period of time. This would allow testing of policy as it "comes to life" outside of the policy realm, once it unfolds in the companies' context. The researcher came to call this view at a later stage "how policy travels", inspired through the service design lens ("policy vs user journeys", for instance); this was a few months into both the initiative in region A and the simultaneously ongoing preparation of the initiative's implementation in region B. The latter is the region she studied in the underlying case III, whose approach is however entirely based on the original design approach (region A) and logic she followed. The latter purely enabled her to be even more reflective with her own proposed approach and refine it, in close partnership with the local main implementing partner. See an overview of her design practice rationale as follows, highlighted/shaded in gray. It corresponds to the brief shared with her manager and hence were/are her own notes from the process:

Design practice rational: A copy of selected notes from my brief to my manager, when presenting him my proposal and choice of the final design approach for the program

- It is important to keep in mind that all our scenarios represent a *process*. We thus will evaluate processes, **or - in better suitable words for our prototyping approach - multiple touchpoints throughout or along a process**

Notes on **design testing framework** (from 27/28 Apr)

In our Mural [link removed] I summed up ups and downs, and opportunities from all the possible formats of testing data measurement (ongoing) and evaluation (final measurement) - See pic illustration



- WHAT ARE WE MEASURING WITH OUR PROTOTYPED SCENARIOS? It is important to keep in mind that all our scenarios represent a *process*. We thus will evaluate processes, **or - in better suitable words for our prototyping approach - multiple touchpoints throughout or along a process**
- WHAT IS THE CRITICAL FUNCTION TO MAKE PROTOTYPING SCENARIOS SUCCESSFUL? 1. It is vital for our sandbox scenario ideas to be understood, experienced and feedbacked along the process. 2. Our main assumption is that the sandbox participants will be available, ready and motivated to share their sandbox experience with us for as long as the sandbox is run. 3. We should make it as easy and motivating as possible for our testees = sandbox participants to collect information about the explainability touchpoints.

Based on the above, I believe we could aim at mobile ethnography (ME) as **base scenario testing approach**:

- ME allows to capture a journey and experiences that are based on multiple media inputs: diary-style (=storytelling or narration), picture, videos, pre-made templates - should keep the participant motivated
- We can moderate the ethnography with certain prompts or pop-up questions (called ‘wizard of oz’), also if we lack clarification on certain features or touchpoints - keeps the participant engaged
- Results in an ME are usually tracked and prepared as journeys, stats, visuals, etc. which could be pieces to share throughout the sandbox process like stage-gates - might keep participant engaged and motivated

- ME is downloadable as app (desktop or smartphone) - creates low threshold for participant
- ME can be combined with physical ethnography elements - like a design probe - to make it interactional and lively, and personal (!); or role play/rehearsal approaches - to enable group activities and fun-moments

[Following the above, I listed a set of platforms and providers that could help us run mobile ethnography, from which we subsequently chose one and vetted multiple beforehand]

Overall, **the chosen prototyping approach was hoped would allow the researcher to go beyond testing theoretically, in the abstract, how a governance topic resonates in its policy form,** and **how it would unfold within a company and its product development**. With the help of design thought and mobile ethnography the researcher hoped to:

1. Break down policy provisions from a long document and test them step by step and piece-meal, on a regular basis and *throughout* a longer period and design-led project duration

2. Offer a user-friendly way for companies to provide their experience from the touchpoints of exposure to the policy provisions: very similar to handling their preferred social media platform, they would provide answers in video, picture, or text style format

3. Based on the ME platform and feedback gathered, the program could be iterated and adjusted - both based on the needs of the companies and the learnings by the design lead or - as particularly relevant for region B and any region the program would scale to - the design team (implementing partners of the initiative) more generally

The design approach, including all other elements published under the design-led initiative, eventually became licensed under creative commons, to encourage usage and further development of the practice by other entities.

The **main project outcome** the design approach facilitated would be recommendations for those making policy decisions ("policy recommendations"), i.e., governments and regulators, for the governance of that particular theme, in the form of a report or write-up. Roundtables and discussions were held to distribute, further iterate and learn for, and discuss insights (learnings from interim roundtables and workshops were included for final project recommendations). Another main outcome was to obtain design insights for product-level

governance and product design implementation - thus product policy or governance - based on what testing companies could develop.

4.3.2.1. The multi-stakeholder and partnership approach

The initiative's core proposal was to operate with a design-led process that is **fully collaborative and broad in its actor integration;** it promises a high degree of collaboration and crossing of diverse perspectives through design, particular through a bottom-up approach that integrates policy users' standpoints - the participating companies - in the making of public policy formulation and recommendation.

Whereas the design-led process the researcher and design lead developed for region A became the go-to process also for region B (and others beyond that), the (1) theme tested and (2) exact questions asked and (3) partnership and stakeholders collaborating jointly under the design-led program in region B varied:

1. **Private sector**: The organization remained the main host organization and initiator of the design-led initiative; the researcher and design lead remained the main design lead on the team and main operational manager of the initiative on our organization end
2. **Civil society**: The project worked with an established civil society institution in the region and country the initiative was operative in. This entity became the main implementing partner, in charge of
    a. Building the liaison and daily point of contact and interface with the participating companies in the region, including company engagement and selection prior to program start and community management throughout
    b. Communicating about the program in the region and liaising (in essence, PR and business development functions)
    c. Main interface and operational manager in communication and project timelines and milestones with companies and all other partnership members, including the host and the policy organizations
3. **Policy and government organizations partners**:
    a. One local government was involved as a supporter of the program in region B; the latter would be the main addressee of the program insights released in

form of program learnings and distilled as policy recommendations in the report

b. Additionally, an international organization that has a stake in region B in terms of knowledge transfer and education in the governance theme the design-led initiative in region B covered

4. **Academia and other domain experts**
    a. Their main role was to vet the initial policy prototype critically; the policy prototype was produced between the host organization and main implementing partner, and open for feedback by all program partners, before tested in an approx. five-month long initiative implementation phase where companies feedbacked on the prototype (excludes initiative preparation and debrief phases between implementing partners)
    b. Experts were involved in either (a) personal mentorship with companies or (b) initiative workshops, mostly to transfer expert knowledge and support companies' personalized scenarios

4.4. Analysis with summary of findings

The conducted design practice (case III) served **objective 3 of this thesis**. It was destined to, *firstly, reveal the practice of design in international policy* and, *secondly, identify design practice's contribution to public value generation from policy in intl. governance*.

Case III reveals that in the international policy context, design practice supports public value generation by laying realities and value associations open that remain otherwise non-, under-, or misrepresented and hence unproductive in the individual perception and decision-making of any given actor or counterpart (who takes part in formulating or implementing the given international governance decision).

4.4.1. Design practice revealed: 6 principles of design-led policy-making practice in intl. governance

Part 1: Revealing the design practice by case III confirms that there is **no one 'practice' of design in international governance.** First of all, the public (strategic) value from policy is expressed as the act of creating balance and equilibrium in society (particularly grounded in underrepresented views). Public value from policy can therefore not be something finite or fixed in the long run and hence also not the value support from design practice thereunder: The actors and their realities are under constant flux, and hence are the 'equilibria' of knowledge and decision-making upon the former; arguably even more so at international governance scale (given the higher reach and complexities of heterogeneous views; see C1IV1). Secondly, design practice's adoption depends on the policy managers who deploy it as an instrument or mechanisms in their given professional context and role they contribute with to policy, which is what the researcher calls "public value creation rationales" and identifies as arising from the "policy practitioner personas"; see section 4.4.4 below on *public value.* Case III lets however extract **6 principles for design practice** to generate public value from international governance, illustrated in Figure 15 below.

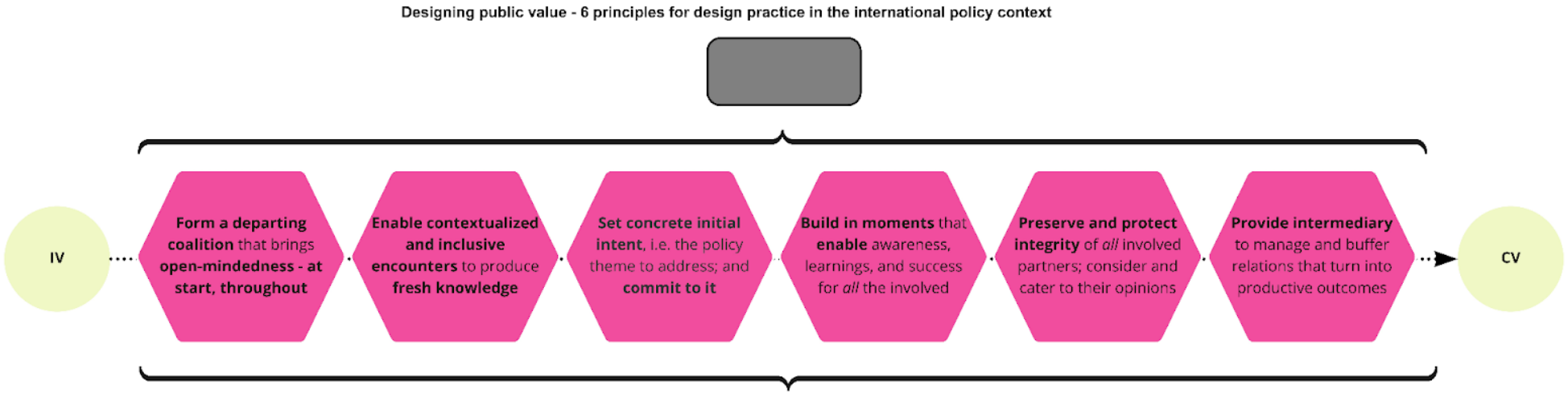


Figure 15: Six principles of design practice in policymaking in the international context - unpacking the black box of the research knowledge gap

Principle I: Departing actor coalition - Forming a coalition of the *willing* (and affected) that brings openness to approaching an issue, initially and throughout

Openness 'to do a new thing and do it differently' is identified as a key condition of actors in the initial coalition`s actor-knowledge interplay: IV7, delegate of the main implementing partner of the design-led initiative case III - a well-established NGO in region B and beyond - describes how the co-designing and initial departing coalition started. She highlights how the initial formation of the relation came together through *openness and curiosity to explore* each other's position and viewpoints, meaning what each party would bring into the coalition. She also underlines the *screening for seriousness* in the respective work: She explains how the delegates of the two parties - i.e. host and co-implementing partner organization - met at an event and brought both openness for proposals and interest in exploring the theme. In IV7s opinion they were considered an apt co-implementing partner[61] as they were assessed as a *"serious actor".* She also underlines that it is vital to always make sure the other person feels you're someone open to conversation and *"available"*. This mentality of *"let's not criticize"* hence seems the opposite of political majority creation around a policy topic or theme and underlines deferral of judgment: IV1, long-standing, high-level political decision-maker in one of the major European Union institution, flags that a [design project] requires openness to new ideas; and that political sides might have no will to tackle an issue as they are "*not open enough*": "*ideological stubbornness*" leads to *"not discussing an issue".*

Secondly, the initial actor coalition holds the essential role in defining the initial policy theme or narrative through which onward involvement of further actors unfolds. With that former it sets the initial intent (compare principle III) and defines the way of making: A design and expert participant (C3R4) regularly involved in co-creation exercises emphasizes that the design-led initiative meets its objective as *"participants were voluntary and represent[ed] different [tech] industries"* and that "*different* or *"multi-stakeholders*" help obtain different opinions or ideas.

Finally, **five key features to establishing the actor-knowledge coalition** can be extracted. The interviewed design facilitators from the corporate and civil society, involved in case III, suggest they be followed. Table C1 in the Appendix lists and makes the five features more concrete through interview snippets and quotes:

[61] Note that the co-implementing partner started collaboration with the design project`s host organization through a different project first. Case III design project followed as a partnership thereto.

1. Must address a new and at least complementary, well-defined policy theme or topic
2. Aligned with agenda or issues of importance within the institution that joins coalition
3. Ensure openness by all coalition members to a different way of making and producing knowledge
4. Pool resources in a pragmatic way and consider various interests
5. Provide convincing appearance about the project to attract relevant voices

Principle II: Contextualization and inclusion for *productive* encounters - Contextualized and inclusive encounters that bring forward productive exchanges and genuine inquiry through fresh opinions/knowledge

Less than inquiring and building actor relations per se, this principle relates to the inquiry of the problem in the policy context, laying open new solution approaches with regards to the defined theme; the latter is what is termed "productive". In C3IV1 and political jargon the former would be considered "compromises": "*Policy is regulation and finding majorities, designing has a creative part in it, but that is not regulation or finding majorities [...] creative might be the [political] compromises and finding them."* IV1 compares compromise- and majority-seeking through the lens of design in policy: She insists that *"a designed legislation itself depends on finding majorities"*, however clarifies that building compromise is what design might be applicable to. She suggests hence the compromise and not majority formation as the generative and productive part in the problem solving.

The essence of design practice in policy in case III is a heterogeneous realities-grounded building of a co-owned direction - versus a top-down imposing of a law; i.e. "compromise" or, more accurately, a productive exchange and, as its product stage, receipt of new knowledge (see interview quotes in Table 17 below). The departing coalition actors include from the outset the policy recipients, i.e. the participating companies, for a "coalition plus" - guided by *"the best interest"* or "*best interest policy-making"* (IV2) that is participatory and open. 'Productive' relates to the inquiry of the problem in the policy context, thus a given need; it is about laying open new solution approaches with regards to that very defined theme and need. The need (not the problem) arises from, firstly: the initially defined, new topic, which is the product of the people gathered and their individual problem definition or value ascriptions related to the theme (see principle I) and the solution space gradually obtained

by the “coalition plus”; and, secondly, the approach to let all actors unpack their value associations towards fresh knowledge in the design process. Unpacking a theme via design practice in policy is hence a matter of the kind of relations established (between actors, thus *people*) and the chosen design practice for the externalization of value associations or attributes from those relations (interrelations with knowledge, hence *process*). The ‘problem’ in design-led policymaking is a function of people and process, thus of the actors with their intrinsic value associations and the design practice to extract those value associations.

Table 17: Design practice in policy - principle II elements: Problem inquiry by design practice and how actors are put in relation to extract individual value

Source: Interviews with design facilitators/enablers in policy and policy professionals (non-designers) Mix of policy, civil society/NGO, corporate	
IV2	-**Meaningful and values-driven perspective** to what it means "*to design [researcher note: policy or products] for the world*" in a "*fair and equitable way and drives trust*" -**Bring people's interests back** into heart of policymaking or product making in response to policy [researcher note: people can but need not be part of initial coalition of the willing]
IV5	-Do more about regulation in **marginalized regions**, not only EU/North America; do more about regions "*not involved in discussion*" -White elephants: public policies and policy makers **want to show they do something, pretext isn't right solution**; this puts resources that could be implemented in other public policy [researcher note: show vs do; accountability vs legitimacy, and opportunity cost; similar reference by IV6)
IV3	-**Design it** [= the design-led project; name removed/anonymized] **with host communities** and the [affected category of population designed for] at the same time; not how we in [international policy institution headquarter location] are thinking about it **but *we with*** [named member countries in policy designatory region]
IV4	-Instructive to **put people from diverse backgrounds - legal, design, public policy, communication - in one room**, try to make them solve the issue and create a prototype, addressing the issue
IV6	-Working **"side by side" with citizens/making sure citizens represented to make us [public officers] really accountable** - **Keep citizen committee [coalition plus] in the loop** of 1. what the objectives are and 2. the achievements of a given policy plan (program) are
IV8	-Creating a policy **taking into account different stakeholders from the beginning**: so *“creating something robust on all levels”*, in 1. enforcement, 2. With target audience that policies are meant to be for, and 3. really built for the future [researcher note: implies that different stakeholder engagement leads to robust policies at all levels] - **Having different stakeholders representing different interests and different perspectives** to participate in a design program; "*robust*" means (aside from forward-looking, flexible, scalable - see above) a final policy outcome that is "*acceptable for all the stakeholders*" [researcher note: interviewee highlights must be in line with “own” corporate policy goals but also acceptable for all stakeholders] - **Participate *“by creating”* something, by *“inputting”* and *“developing”***; co-creation and participation have very similar meaning [researcher note: engagement interpreted as something per se productive by IV8, i.e. participation equals not passive but active engagement]

Finally, the interview quotes listed in the table suggest various departure points into or "**styles**" behind how design practice (as the process) assembles relations or stakeholders that can qualify as productive in the international policy context:

- **Functional** in the policy context
    - Through early participatory focus on legitimacy-building and acceptability of a policy solution (IV6, IV8)
    - As a means of *"accountability"* to citizens (IV6) and *"transparency"* (IV4) vis a vis the policy officer or policy maker
    - Work with "*specific local places*" "*or as well federal government*" to "*create policies on how to make the most*" and "*democratize the benefits of digitalization*" [i.e., the latter could be replaced by any evolving topic; speaks to creation of balance] (IV7)

- **Instructive** for the policy officer/manager
    - *"Put people from diverse backgrounds - legal, design, public policy, communication - in one room"* (IV4) and try to make them solve the issue
    - *"Representing different interests and different perspectives"* (IV8) to present *"robust"* (IV8) and *"accountable"* (not legitimate) solution pathways (IV4)
    - Considering the *"target audience"* (IV8)

- **Inclusive** in participation by society
    - Considering the *"marginalized",* i.e., *"those not involved in the discussion"* (IV5)
    - Integrating 'the affected' *"community"* as the recipient (IV3)
    - Design is doing [policy] consciously: policy solutions implemented don't necessarily address the problem or a problem at all when affected communities are not involved (IV7)

- **(Re-)Generative** to decision-making for society
    - *"Vision-setting"* (IV2) and *"forward-looking"* (IV8) - *"for an equitable and just world"* (IV2), thus scalable and widely acceptable
    - Considering *"people's interest in decision-making"* (whether public or private sector/generally) (IV2)

- Creating something *"really built for the future"* (IV8)
- Design is doing it [policy] "*more carefully, more sustainably*" (IV7)

Principle III: Precision and consistency in *initial intent and its orientation* - Set concrete starting point and commit to initial intent/ the problem to solve for

Both the "traditional" policy officers in my dataset and the ones practicing design claim that designing policy means to set a very "focused", "specific", "concrete" departure point, i.e., a particular theme, to model the coalition and design practice around. IV4 assesses that design establishes and enables relationships and interaction with policy-makers meeting experts or other stakeholders in a closed space where one can work on a given issue, namely "a very *specific issue"*. She also states it is *"important to have very focused discussion within those safe spaces so that we can come out with a concrete outcome."*[62] IV6 qualifies design-led programs as approaches that need to start "*from some point*". The latter needs to be the "*necessity of the citizenship*", from which, subsequently, one can plan and make policy.[63] IV8 underlines that a given citizen's context or concrete need might help provide a better starting point in policy: *"We see bad regulations or bad public policy proposals because they're not addressing the problem or they're not addressing what they wanted to address at the beginning. So I think identifying the problem and sticking to it, finding a solution to a problem, is always the key."* Also, the deployed design practice was presented by the lead designer's line manager as follows at a global regulatory summit: *"[...] we co-create normative frameworks, what we call policy prototypes,* ***and we tend to focus on very specific topics related to AI.*** *So we can either test the governance framework on transparency and explainability or on risk assessment.* ***We try not to boil the ocean and be overly comprehensive but focus on a specific topic of relevance****. [Own notes,* from 20 October 2021].

In fact, interviewees reason that a consistent starting point enables better potential for nurturing and developing the argument and consequent knowledge formation: IV4 assesses

[62] Question: What concrete formats do we need to augment the value proposition from public policy today?
[63] Question: How do design-led approaches change policymaking? Note: IV6 defines policymaking as a *strategy* solving problems.

that it **enables testing based on a 1st draft** including the testing before a 1st draft of policy put into law[64]: *"[...] you need to, to solve a challenge so you need to identify your challenge, your issue, your problem. [...] when you draft a legal text you must have some sort of knowledge already of the solution that you want to identify, but then you can test it, [...] for example [...] what we did with [name of design-led initiative, anonymized] is we already had a policy statement from the European Commission, and we used that to check whether that policy statement was realistic or not. But I guess that there is a way of also doing some sort of tests before there's a policy statement, and to inform the first policy statement."* IV5 assesses that a **concrete starting point derives from abstract assumptions:** the latter might **require change or adaptation** as soon **as they hit practice, i.e.,** confront participants (in this case the participating companies): *"I think at the beginning, we thought that the companies already know about ethics, and about transparency and explainability. And when we started the programs, it was the fact that they didn't know about that. So, we needed to cover that topic in the beginning. So I think that* ***I would change to think that all the companies already know about this topic is a huge error, and you need to focus to cope with that."*** [65] IV3 equally assesses: *"The first thing is that when we started****, what we thought would be a good thing to do, we changed it when talking to them.*** *The theory showed us one thing, and then when we did, like, a quick implementation of that it was not the way to do it. [...]* ***And that led to a different way to think public policy*** *[...]."*[66] She continues and explains about the approach: ***"Since from the beginning we started*** *thinking about that we should do this with a different approach, with the agile [design-led] approach, it was easy for us to make those adjustments. I think the difficulty is, when you set up your programs or your development project to be using the Gantt chart approach, and then you decide okay you need to change it,* ***that is more difficult to adjust than if you set up your project from the beginning*** *to work in this way."*[67] IV8 adds, too, that a concrete need or citizen context might help provide a better starting point in policy: "*When you have some idea of an example then you can just assess these priorities a little bit better*".

[64] Question mini-activity: Where do you know the problem from?
[65] Question to IV5, operational project manager at co-implementing partner of my design-led practice project III: If there was anything we could change in such approaches, what would you change with your experience now?
[66] Question: What practical experience have you made with that particular approach [referring to design-led approach, anonymized] so far? Can you share any insights on how you've lived this approach?
[67] Interviewer: Was it easy to change your approach, meaning once you had the additional evidence from the ground to change the initial approach, how did you go about that?

Identifying the concrete theme or problem at inception of a design process, rooted in necessities, is necessary but not sufficient for valuable design practice. Instead, it needs to be measured against and maintained as the problem throughout the design process. Finally, the researcher's own deployed practice and project notes confirm and align with what IV5 stated, namely that the *"[...] initial theme remains but [the] approach changed as we hit practice/implementation stage:*

- *Participants could not implement the program as we thought they would, they needed to establish another base level of knowledge (i.e., we asked them to disclose data without them having done their bias or transparency work first)*
- *Participants required extra knowledge on what policy was all about, which is why we included a policy seminar dedicated to it*
- *Participants required different ways and paths to implement user-facing solutions in their products, inspired by policy; we needed to enable them differently in the last phase of the program, where they designed solutions for their user/user-testing"*

Principle IV: Success moments and awareness-raising for *each* actor involved - Build in productive, end-goal oriented moments for all involved, for awareness raising and ongoing practical learnings/success

Policy professionals in this dataset (public and private sector) who deploy design-led, participatory practice in policy making describe the latter as unidirectional and as directed to serve in-house - i.e., policy officer - requirements. IV6 explains, as a high-level policy officer in region B, how they present one initial proposal and then adjust based on what the citizen committee (a group representing the citizens) think would be suitable; how they inform back and then again obtain feedback: *"We have the [anonymized] committee that is made up of citizens, and we discuss our policy and planning with them. So we have, like, the national plan of transparency and the national plan for data protection, and these plans are discussed with our citizens, our representative of our citizens, and we make arrangements and adjustments to this plan. So we come to them with one initial proposal, and then* ***we make adjustments*** *in* ***the sense of what they think would be suitable,*** *will be desirable in terms of citizenship, and we make these adjustments and we have these plans [...], a three year plan. So, we discuss it [...] We also* ***keep them in the loop of*** *what the objectives and the incomes of that plan is [...],* ***listen to them and in many cases we make adjustments to our policy, just***

taking in consideration of what they have to say.[68] IV4, policy manager at the host organization, explains how she "helps" policy officers make more informed decisions, again satisfying a unidirectional flow of information: *"I think in the end,* ***it will help policymakers to make more informed decisions,*** *and more informed decision means, well, better regulation, more balanced regulation, efficient regulation, robust regulation."*[69]

At the same time, next to a unidirectional handover, long-standing officials refer to policy-making as an evolutionary craft, a process that lets topics emerge - ultimately to establish learnings that are *"practically helpful", "useful*": IV1 states that legislation is like a "*competition of ideas"* and that a lack of feedback on ideas creates not helpful or [not] useful practical things: *"For instance those platforms that allow to bring together different audiences for a joint purpose, including those who are not usually brought together. [...] So I find it [...] extremely necessary because politicians are not the experts in this practical behavior, in this practical using it. [...] So that's why I find it's extremely necessary,* ***especially on the European level, because we are working here very abstract,*** *that the platforms of affected groups have the possibility of making themselves heard in a way. Also* ***I find that legislation is also a kind of a competition of ideas.*** *That's why also* ***you have to have this feedback*** *in a way. So if we would have been left alone here without any of those feedbacks then we are creating probably something what is probably not helpful and useful for practitioners."*[70] IV6 interprets design-led processes as coming with one initial proposal, and then making adjustments: *"[...]* ***these plans*** *[note: refers to a policy]* ***are discussed*** *with our citizens, our representative of our citizens, and* ***we make arrangements and adjustments*** *to this plan. So* ***we come to them with one initial proposal, and then we make adjustments*** *[...]"*[71]

In this context, design acts as a generative force that amplifies and enables learnings *to occur for all actors involved in the design-led process - both* the affected *and* the policy officers who curate the policy content or decide over it. IV2, policy manager deploying design practice regularly at the host institution, says it enables to externalize value associations - "*lessons"* - for the purpose of attending a practically implementable suggestion *"downstream"* more accurately and in line with the context: *"I think we need like an* ***ambiguaning of that discovery phase, in, in the policymaking cycle.*** *[...T]hat* ***discovery phase is probably not***

[68] Question: What are design led approaches in public policy for you, how do you interpret them?
[69] Question: What contribution do design-led projects you are involved with provide to public policy?
[70] Question: How important do you think, tied to your role/ institution, is participation? [as one of the core design practice elements]
[71] Question: What are design led approaches in public policy for you, how do you interpret them?

linear *[...] So if that discovery phase is not well framed that can lead to misaligned outcomes downstream, I think. Whether we're talking at the supranational level or national level or even within a company's policies."*[72] IV3, as a long-standing policy officer at the participating international organization in case III and working with design practices, underlines how design helps to move away from linear, "waterfall" thinking when asked about what design-led practices in policy-making were to her. They enable them to be *"more agile in the design of public policy";* to run "*prototypes"* and *"draw lessons"* faster as opposed to what they *"used to see*", she says: *"[...] being able to be more agile in the design of public policy and in being able to do prototypes and drawing lessons, really quick, and then adjust it as doing the design. That the design is* ***not the waterfall thing that we used to see like the Gantt charts*** *that we used to see, but should be, like,* ***an iterative process of things.*** *That's my understanding."*[73] IV3 also states how the policy idea changed when tested with the users to design for in the first place: *"The first thing is that when we started****,*** *what we thought would be a good thing to do, we changed it when talking to them [the policy recipients]. The theory showed us one thing, and then when we did, like, a quick implementation of that it was not the way to do it [...]"*[74]

By building the opportunity for practical learnings and success across all actors, design practice establishes - without designing for it explicitly - a link between individual actors (corporate, public, NGO) and their activities, that is marked by both impact and accountability. IV5 is asked: *'How come, how come, do you think they [the participating companies and policy recipients] were so engaged and so motivated? Why do you think this was the case?*'. She replies: *"I think because it was the first time that the company could be involved in public policies. They were very excited about that.* ***And because they started to see the changes in their company.*** *And, like in good, good changes, you know, they didn't know about bias, and they started to, to be aware about the, the negative impacts that could be lived by their AI systems. [tangible learnings]. And also they started to* ***feel empowered by the knowledge.*** *Also, and also, for example, [the expert mentor], who was a key part of the, of the program,* ***I think his knowledge about the topic and ethics and everything, I think that was important too*** *[education]."*

[72] Question: And where would you see the need for design driven approaches and policymaking if you had to, you know just sum it up in a nutshell?
[73] Question: What are design-led practices and processes in policymaking to you, in your context?
[74] Her answer addresses a practical experience with design-led approaches she's contributing to in the region that she is asked about (and that is anonymized here).

To flesh the above out further in relation to the knowledge gap: Design hence, through the opportunities for practical learnings in the individual actor's real context, **allows for an alteration of the individual actor's value association with the given theme.** Doing so, design expands the perception of what is desirable or what can be contributed to the policy theme. Accountability and a sense of responsibility for individual impact and contribution under the policy theme is established. IV5, through her observation of the design-led approach proposed (see 4.3.1 for the description of the design practice), describes how it empowered the participating companies to associate voice via the single moments of interaction on the mobile ethnography (ME) platform throughout the project duration. The former allowed the case III project to cultivate knowledge and companies to externalize their value associations. IV7 underlines further that case III helped the companies to have an overall more humane use of AI systems: Individuals in policymaking "can't care" rather than they "do not want to care" about a policy proposal: Design-led approaches establish the possibility to make productive associations with policy out of the policy recipient's own context. As IV2 puts it straightforwardly: "*People don't understand how policy affects them and hence don't care."* She assesses, too, a lack of "relation" and hence capacity to build relation with policy content. The former leads to the incapacity to extract knowledge that would allow to build value upon an own need, e.g., the participating company's need as the policy recipient.

All the above speak to how important the mutual building of knowledge was, so that impact and roles were able to be actively invested and simultaneously changed throughout the design-led project and with the help of its process.

Principle V: Active *preservation of integrity of all* involved roles, visions and attitudes - Preserve and protect integrity of all involved partners, their visions, expressed opinions/attitudes, and work with/cater to them

Regardless of their exact role in the process - be it as a coalition partner, policy officer, an expert partner, a participant, or design facilitator - meeting all agents at eye-level and thus in *their particular, given* context or circumstance - was highlighted as a key design process element. This 'preserving integrity' principle arises at various stages and in various shapes in the design process:

IV3 (policy officer at partnering international organization) flags the importance of **meeting the people at their unique point of departure or in their condition.** She suggests **designing to solve for or alleviate potential people's vulnerability first**. She underlines this approach as a radical change to how policy is usually done: The example she provides is the establishment of a single point of contact or touchpoint for the policy recipients, which was their first idea in a design-led practice project she references. She shares how the policy product`s recipients, the migrants, feared being deported, if they traveled to see authorities as a physical touchpoint established in the region. Thanks to deploying design-led practice, **IV3, realized that the way to implement the project is not for the migrants to direct themselves to the services but for the services to seek them instead**. The former was a cognizance that "*led to a different way to think public policy for migrants*": *[IV3] "The first thing is that when we started, it would be a good thing to do, we changed it when talking to them. The theory showed us one thing, and then when we did, like, a quick implementation of that it was not the way to do it. We thought that having, like, an office, like, a single window, an office where the migrants would come would be a great idea to have only, like, one place to do everything.* ***Now, because of how migrants are located, and all the fear that they have to be deported or whatever, the way to do it is not for them to come to the services but for the services to go to them. That was a completely different thing*** *[…]."*[75]

IV7 (co-implementing partner lead) takes into account **how the unique starting points, thus situation and status quo,** of companies as the policy end users or recipients in the program were **considered and integrated throughout the design-led program**, despite them causing change in the program plan, leading to iteration, and requiring additional support and adjustments from the partners: *"[...**W]e had to change the program because the companies didn't even know about AI challenges or AI ethics, and how can I ask you to be transparent if your system is so biased and if you've never checked and made sure that it wasn't.** So, I think, that was great, working with those companies who are really open to feedback to doing things well and having a positive impact on society.* ***And they didn't have bad intentions, they just didn't know,*** *didn't check their bias in their system,* ***helping them just to have an overall more humane use of AI systems."***[76]

[75] Question: And what practical experience have you made with that particular approach [= design-led approach] so far? Can you share any insights?
[76] Question: What value does such a project bring to public policy, now that you've seen it unfold in practice?

IV2, designing policy officer, at the host organization compares a design-led approach - a participatory approach that integrates the voice of young people and children about AI, led by an international body - with his own practice and project III. He qualifies that approach as noteworthy given **the alignment between the ones affected and the organizational purpose** (of the international body as the design host): *"You know I've seen UNICEF's work on AI be quite, quite powerful. They went about the **participatory approach with young people and their opinions about AI**, their perspectives and their insights, in a way that did inform their own principles. But I think that **the way in which they went about it was to be lauded and very much in alignment with their own values and capabilities** [...] UNICEF is set out to create **guidelines that look for alignment with the rights of the child and [these] are very laudable outcomes** [...].*[77]

Design practice emphasizes not just to treat identities, both the ones designed for and the design host's, with integrity but also the expression of knowledge or opinions – thus the value associations (in knowledge gap terms) - themselves: Interviewees described the process as keeping people, opinions, and their space of exchange "safe". Through this safety in-built, design practice offers a process or method that allows for what remains otherwise unsaid to be pronounced: Interviewees 4, 5, and 8 flag free externalization and exchange of perspectives for all the involved, without potential repressions or negative consequences to expect but rather to develop more robust policy solutions. IV4 touches upon *"some sort of safe space"* for people to freely exchange their perspective, for them not to be afraid that their expression is held against them afterwards. - Note that with "people" she refers to policymakers and those subject to policy.[78] - IV5 underlines that the difference the program (case III) has made was that it *"g[a]ve them [= participating companies] the voice … to say what they wanted to say about ethics and the problems and the challenges [...]".*[79] IV4 and IV8 (both policy officers at the host organization supporting case III) emphasize that the design-led approach enables focus on and preserves a variety of opinions, collected through the lens of a variety of different stakeholders, which leads to more "robust", "stakeholder-proof" solutions: *"So, the solution that you create is also more, maybe, like, **stakeholder proof**, because all the different stakeholders participated together to identify the solution and creating the solution. So in that sense I think it has a lot of, like, it's more robust. It has to be*

[77] Question: What is the difference a design-led approach makes?
[78] Most interestingly, IV4 refers to the former as reestablishing relations: *"[Y]ou need **to recreate** the connection between the policymakers and the people that are being subject to the policy."*
[79] Question: What distinguished the design-led approach?

more robust, just because of the process implies that it's going to be more, more robust."[80] *(IV4); / ...the final outcome of a design program [...] can only be* ***robust*** *if different opinions are taken into account, different stakeholders, different impact assessments are taken into considerations, different backgrounds, geocultural attributes, so in that sense, participation is crucial."*[81] (IV8).

The design process is not just upgrading or enhancing voice - of, ideally, a multitude of stakeholders - but also about maintaining and preserving roles that are in line with the existing repartition of institutional responsibilities (at intl. governance level). IV7, the co-implementing partner lead who adopted a design facilitating role in project III, underlines that: **"***[M]y role has been to [...] make a coherent strategy* ***where none of the stakeholders do get harmed,*** *and everyone's interests are being taken into consideration. And then also more on a kind of operational basis … [...]* ***making sure everyone who needs to be involved is involved****, in that they know more or less when we'll be calling on them to check something or to get their opinion on something."* From her perspective on design practice, IV7 underlines the importance of creating value for everyone by managing their interrelations, departing from each individual actor's perspective (not interests!) and role, thereby not to exclude or be exclusive. In **not to exclude an actor or not to be exclusive** she refers, e.g., to how big tech companies are important actors in the governance of AI or tech equation, to move a conversation forward and cannot be excluded as the *"bad guys".*[82]

To conclude, integrity and its protection – and its maintenance throughout the design-led policy practice process - manifest themselves at different levels: with regards to the *problem* (those designed for), the *process* - and thus the extraction of value associations, its management or orchestration, the final *product* or solution, and the *actors* (partners and participants) and their tasks. Providing and preserving integrity, and thus design practice in policy, means to:

(1) **Solve for reduction of a given vulnerability** (of the affected, i.e., those the policy solution is destined to serve): Meet people and their needs where the latter arise and occur (=context)

[80] Question: "What role and thus legitimacy do design-led approaches have in current policy-making processes?"
[81] Question: Why is participation as an element to design-led practice important for your context and work in international policy?
[82] Question: Why/why not do design-led processes achieve their aim?

(2) **Ensure a culture of boundaryless expression:** No punishment or repression or value judgment on opinions or value associations

(3) **Uphold and integrate a variety of opinions:** Craft robust (representative of reality, diversity of context) and stakeholder-proof (representative of people in that reality or context) solutions through free sharing of opinions and hence value associations throughout; the latter enables, consequently, the extraction of a series of value associations that themselves enable robustness (thus a valid picture or frame that policy needs to tackle)

(4) **Enable clarity about goals and missions, and capacities (capabilities) and legitimacies, of each actor:** Define expectations and roles of the individual agents (inspire for action and push for it) at organization and individual agent level

(5) **Ascribe all actors a clean slate:** Ensure exploration of conditions of each partner and participant and a culture of good intention

Principle VI: *Intermediary that builds* outputs from actors and their interrelations - Provide intermediary to manage and "buffer" relations, to turn them into productive outcomes

Multiple interviewees refer to the necessity of an intermediary in the design process in intl. policymaking. The intermediary would uphold principles like preserving integrity (see principle V) of all the involved parties, i.e., would sustain a wide set of mindsets and value associations in the design process, e.g., “neutralizing” the participating parties’ value associations or *“interests”* (as IV2 called the latter):

IV7 describes their role as an intermediary, as a *“high level buffer”* or *“buffer”* actor between outcome of the project and individual actor realities, in charge of “neutralizing” the latter: *“[W[e're trying to act **as an intermediary actor,** that can make sure that, despite this project coming from [a particular kind of financing actor or host] it's still like **kind of a buffer**, you know, kind of a buffer between that and reality. I guess it's a weird, weird word to use, but,*

like, being a buffer between."[83] She emphasizes a mediating role as the intermediary actor: *"And so my role has been to kind of take all of that and make a coherent strategy where none of the stakeholders do get harmed, and everyone's interests are being taken into consideration."* At multiple points throughout the conversation she refers to the importance of **neutralizing value associations, roles, and being a neutral actor.** She thereby goes *beyond* the perception of ascribing neutrality *to a particular type of industry or organizational player,* but rather considers the individuals who form part of the particular organization: ***"So, this is the first time that we have such a, I guess like a high level buffer role*** *with like, the biggest of the big techs. [...] Like,* ***it's also our role to contain it [project III]*** *and keep [all actors] happy because, again, they trust us. And that's I think the key thing for [name of co-implementing government organization]: They trust us. Everyone trusts us, either because they've worked with us before, or they've seen our work or we've talked to them and, and* ***it goes beyond just our position as a civil society organization, that doesn't necessarily actually mean 'neutrality'.*** *There's a lot of civil society actors that love to criticize [name of hosting corporate actor] and one of our rules is 'no'. Like people love to criticize government, you know oh my gosh, they're so slow and from [us],* ***our position is everyone's just doing the best they can****, and you need to adapt to different, how different people work, [...] plan for it, don't be surprised, that happens all the time, it'll happen again. [...] But, it's beyond our role as civil society, it's also if you talk to us, [she mentions the Director's and her organization leads' names], like,* ***you will realize that we really do care, as individuals [...] that your organization doesn't get hurt****."*[84]

Juxtaposing IV7 with IV1 suggests parallels in the crucial requirements for an intermediary in international policy decision-making processes, both from the perspective of the co-implementer and her understanding of the role and of a high-level political decision-maker. IV1 refers, after describing her relation and role with regards to design related to two data-related governance approaches, to **a 'rapporteur' role:** *"So, if I'm going back [example 1] to data protection, [...] I have been still a member of this negotiation round [...].* ***I would say it's, it's the role of the rapporteur*** *or* ***role [...]*** *that* ***you will have to be open also, for other ideas, better ideas*** *[…]. So personally, I would say I'm always happy if we can find a* ***content***

[83] Question: Can you tell me just a bit more about how you were involved with [project III], your role from your own point of view?
[84] Question: How do you feel about the role of being this 'buffer'? You called that 'buffer' before.

wise solution, what is practical, *and what is* ***not borne in the way of ideological ideas. Otherwise, you can't [make progress/proceed].”***[85]

IV2 brings in extensively the same viewpoint for a what she calls a *“custodian”* of *“interests”;* 2 points are intriguing of the conversation: When asked about the difference design can make to policy, IV2 directly links design to creating a balance, through participation, guided and enabled by “*experts”*. Throughout the interview, IV2 emphasizes there would always be a need for such an intermediary in a design practice approach to international policy, first referring to the intermediary as an expert, and gradually neutralizing that stance towards a more value-laden name, namely a *“custodian”* - not of the initially brought-in individual interests or value associations but - of the insights generated throughout (!) design-led policymaking: IV2: *“I think there's always going to be a balance right [...]* ***there will always be a cadre of experts that are ultimately designing the policies or steering, shepherding, the process.*** *And so,* ***we need to better understand what the role of those experts*** *is in terms of the contract that we as purported experts have with a populace, or a set of users, and if that contract means that discovery is where participatory design really flourishes, and co-design and co-creation really flourish.* ***But then there is an intimate, or maybe unwritten or written understanding that those inputs are safeguarded throughout the lifecycle, and that in some idealistic way are well represented in a final phase of expert driven creation and consultation.”***[86]

She further explains that a "*custodian*" needs to *“take a broad political agenda”* into account, that goes beyond *“CSR”,* thereby realizing *“stakeholder and not shareholder”* capitalism. She highlights a context in which the custodian prioritizes understanding and preservation of needs and value associations in the form of (as IV2 calls it) *“best interest policy making”.* Such best-interest policy making would enable to provide new visions to both governmental and private sector decision-makers, based on design approaches and *“agents of change*" that lead them.[87]

As part of this principle, it is discovered that it is less the lack of capacity but lack of legitimacy that leads corporate actors to engage in a design approach, co-led by an intermediary: IV2

[85] Question: What do they [design-driven approaches] mean to you and for your role?
[86] Question: [S]o if you had to sum it up, what difference can design-led approaches make in public policy?

[87] Question: What is the ultimate value that a design-led approach can bring to public policy?

stated that the private sector brought the financial resources: "*You know, that the money, the money is in the private organizations and a lot of them are conducting initiatives in different markets to their own betterment [...]".* IV4 mentions the importance of creating legitimacy in the context of their particular corporate path dependency in spite of the abundance of financial means: *"So we do have a responsibility in giving a space at the same time. It's kind of tricky because you know, [given the nature of a large tech corporate],* ***sometimes our intentions are not understood as very pure.*** *So we always navigate in a very difficult environment where, even if we have goodwill, we need to be careful not to be too much or at the forefront.* ***So it's also very important to rely on, I would say, more neutral stakeholders,*** *that may be a better place to organize such meetings [...]."*[88]*; [...]* ***thanks to companies like [tech corporate, anonymized] who have the resources, and that can hire the right people to think about those issues that I was introduced to that."*** [89]

The neutral intermediary can be described in terms of a public value triangle's public manager, who merges needs, capability, and legitimacy to build public policy (see theory chapter, 2.2). However, based on the interviewees' statements, *none* of the existing policy actors out of the corporate, public, or NGO space can bring in all PV elements - needs, capability, legitimacy - at the same time:

(1) The intermediary out of the corporate/private sector context (compare IV2, IV4, or IV7 statements) operates under absence of legitimacy but abundance of financial and human capital
(2) International or government organizations (compare e.g., IV7, IV4) operate under simultaneous absence of knowledge (thus capability) and resources
(3) Civil society/NGO shows absence of resources (IV7)[90]

See Table 10 below to sum the former up. - **There is hence no route to design-led mechanisms other than through a participatory design approach that is co-steered**:

[88] Question: What role would you say you can have in your capacity and your role, or, as, you know [tech corporate, anonymized], as the institution in supporting such new formats [referring to design approaches]?
[89] Questions: Why are you involved in the design project [case III]?
[90] [Interviewer]: Who do you think should decide on how [design-led approaches in intl. governance] work and how they contribute to policy making? IV7 [co-implementing host, civil society]: *"Like if you're going to have a roomful of people from the industry just give us a space and so that we can talk about responsible ethical humane AI. So, honestly, ideally it would be us, leading the conversation but then who would finance it, you know … "*

Table 10: Assessing design practice intermediary fitness by PV triangle requisites legitimacy, capability, and value insights (insights drawn from case III dataset)

Qualifiers of a "high level buffer" or "neutral intermediary": Checklist of what existing actors in the international governance domain bring to the policy-making table, based on public value triangle dimensions			
	Public	**Private**	**NGO**
Legitimacy	Yes	No	Yes
Capability	No	Yes	Some
- *Knowledge* - *Financial*	? ?	Yes Yes	Yes -
Public value	?	?	Yes

An appropriate design-facilitating intermediary in international governance is comparable to an enlarged understanding of the public manager. The latter should support public value generation across legitimacy and capability parameters. The characteristics of the intermediary also suggest it should bring a heightened focus as to how public value is generated:

(1) **Impartial with regards to the outcome:**[91] The policy theme to treat and unpack provides elements that are made to work for everyone.

(2) **Non-judgmental with regards to actors and their opinions; active in facilitating cohesion and building compromise:** The intermediary carries the role to manage "*interests and relations between everyone*", and by that to "*contain*" the project (IV7).

(3) **Facilitating relations and exchange that otherwise could (!) - not would - not take place between actors:** The intermediary is creating the required "distance" between two parties that otherwise might not be legitimate in working together; partners, roles, and activities are transparently communicated.

[91] Contrary to the point IV7 mentions in the description of her organization, the intermediary actor cannot be "neutral" in itself; also an NGO has an organization purpose or works in the name of society at large. It is the design practice that helps obtain some degree of abstraction that is co-owned across all the participating actors.

(4) **Cross-validating outcome with a view to the interests of *all* the involved** (to uphold integrity of the agents; compare principle V) **and the initially set mission** (to uphold consistency; compare principle III): The intermediary's role "*is being a buffer between everything*" (IV7).

What persists despite a design-facilitating intermediary is, as IV2 puts it, **the "massive gap between co-creation and co-design**", i.e., the discrepancy - or two spheres (see as indicated in section 4.2, conclusion section of the preliminary cases): The latter is the attributed and mandated, formal decision-making (sphere two) about policy content generated (sphere one) and thus put into force, with a political majority or compromise (compare Rationale 3, section 4.4.4) - to be built around *in the political realm*. **The latter remains, as my findings reveal, untouched by design practice in intl. governance and its decision-making processes.** At maximum, sphere two and decision-making remain indirectly influenced by design practice, namely through suggesting a focus on collecting heterogenous, as robust as possible, viewpoints for content creation in the policy formulation stage.

4.4.2. International governance policy design specificities

The international policy realm bears, through comparison, competition, or enabling to undertake new actions or to obtain new information, a far(er)-reaching potential to uncover, acknowledge, and address knowledge gaps in policy. Policy officers (regardless of the sector) describe:

Problems are witnessed **based on comparisons on the international arena,** reaching beyond national cross-comparisons or evaluations. IV6 points out: *"[...]. **So, for instance, [we see we have] a problem if we make some comparisons on the international arena,** or in the national arena against other agencies that may have something to say about the same problem. **And that's when we can detect that there is a problem."***[92]

[92] Question: How do you know when a problem is a problem?

IV1 attests to the particularity of institutions at international governance level, how they bear certain roles or 'mandates' with relation to each other and compete for interests accordingly: *"So what I did not really mention so far is the institutional role that we should play as a parliament as* ***a kind of a natural rival*** *in the European Council because they are presenting the governments of the member states and we are presenting the citizens.* ***Therefore, we have a kind of a competition situation****.* ***The Commission is more or less in the middle somehow.*** *[...] So, it's* ***this trilateral relation between these institutions, i[t']s a kind of a part for itself*** *[...]."* [93]

IV1 shares, additionally, how cross-national stances bear real potential for experimentation to learn for better policy practice elsewhere: "*Yeah, so If I'm looking now to this subject of [policy theme at hand; anonymized], so, we* ***have already in place in some member states*** *the kind of a regulation, and this is different, and* ***therefore the experience what they have, there already is of value for us that we can see 'oh, you have done already, this is not going very well. So, we have to make this differently.'"***[94]

IV3 - she is an established policy officer in an international organization - confirms that her institution's and her own role lie in supporting with extra knowledge that national governmental decision-makers otherwise would not have readily access to, be exposed to, or could legitimately (take the risk to) generate: *"I work at an organization that works with governments [...] to support them in their development achievements. […] So, our role is, is* ***helping them to see the new, the emerging trends, the things that are coming and how other parts of the world are dealing with the same issues.*** *So the* ***first I would say is helping them to foresee the new things coming****.*[95]

[...]

The second would be that ***knowledge interchange with other regions of the world.*** *So, you can see more advanced countries in the digital phase for example, like, [country name, anonymized] that is more advanced in governance or the use of digital assets than most of*

[93] Question: How do you perceive, again tied to your role and institution, the value of so-called co-creation in policy, i.e., the generative production of outcomes and learnings by a group of participants that then would fit into the use in policy?
[94] Question: How do you perceive, again tied to your role, the value of a policy proposal being iterative and suggestive?
[95] Question: Can you tell me more about your role and how it is related to public policy?

the [region, anonymized] countries. So, ***we can facilitate the debate, the conversation around those issues within governments.***

[...] Artificial Intelligence, for example, is a new technology. It is hard for governments to justify using taxpayers money for something that may be not worth it. So that's the other value added, ***we can help government to test, really quick, things, and if it's good, they can scale it and draw some lessons learned from that.*** *And for whom? At the end of the day, the beneficiaries are citizens of [region, anonymized]. As with public policy, you do policy for the citizens."*

International policy supports filling knowledge gaps by consideration for a wide actor base and thus contexts. Instead of a 'right' or 'mandate' to take initiative, freedom and empowerment to take initiative or be involved in the policy formulation stage gets front and center:

IV1, the high-level political policy decision-maker, describes the nature of intl. policy and how actors interact at intl. governance level: *"So I find it myself extremely necessary because* ***politicians are not the experts in this practical behavior, in this practical using it. But we are somehow - hoping we are somehow - the expert in balancing*** *everything in a way that it might still work or it might be solving the problem and […] so on. [Note: policy makers self-define as experts not in content but 'balance'-wise]. So that's why* ***I find it's extremely necessary, especially on the European level, because we are working here very abstract*** *[...]* ***That's why, also, you have to have this feedback in a way. So, if we would have been left alone here without any of those feedbacks then we are creating probably something what is probably not helpful and useful for practitioners."***[96]

IV8, highlights that, under a global approach to policies, policies need to be 'scalable': in her eyes, design supports contextualization and integration of viewpoints and scalability by consideration of local(ized) necessities. Just as IV1 highlights the indispensability of including diverse voices, IV8 confirms the importance of finding ways to include vast contexts and needs or backgrounds consciously, for a wider 'competition of interests': *"[...] I think scalability is important.* ***As you know, a good public policy needs to be scalable in***

[96] Question: How important do you think, tied to your role and institution, is participation [...], allow[ing] to bring together different audiences for a joint purpose, including those who are not usually brought together?

different markets, it can also be scaled to different topics. *[...] This is, this is also something that, like, in Brussels [note: she is referring to the EU institutions] is often taken into account that you know, like 'How is Brussels producing policies?' 'Are they going to be scaled later in Australia or in Canada or in the US?'* ***The world is so interconnected that, you know, the policies need to have this kind of global approach, on the AI file [note: referring to Artificial Intelligence policies] similarly.*** *And therefore, it's important to have this open, open-minded view into regulations as well."*[97]

At the same time, IV8 provides an intriguing example on **capability and resource restrictions for policy regions** she covers, stating that capabilities were very important and a bottleneck for "her region" or local member states, and thus important to be taken care of, i.e. compensated with, at higher level governance (in her work, she covers the region's policy perspectives and secures they be integrated and considered in policy proposals): *"The thing is that the* ***region that I cover, for instance, does not have so much ambition to produce local initiatives*** *such as maybe Germany or France. These are countries which have much higher local capacity and ambition. [...T]hey just have much* ***more capabilities to develop local policies in parallel to some [international governance level] Brussels proceedings,*** *which might be tackling exactly the same topic.*
[...] However, I also understand that ***this ["the design approach", as she refers to case III] is a time-consuming process.*** *Not all members, smaller member states, have the capacity to run a design program for an opinion on a file. So I would say that on a Brussels [inter-/supra-national governance] level, this approach is much, much more important than on, on national level."*[98]

To conclude this subsection, the international governance realm bears far-reaching potential for design practice. Naturally, it is home to comparison across different jurisdictions, in order to bring forward robust policies (e.g., IV6, IV4, IV8, or IV1). Design however amplifies the understanding of competition with collaboration and contextualization: It explicitly allows to design experimental approaches across national government levels, to draw lessons and abstract knowledge from which to learn from at scale for a more expansive, e.g., the global,

[97] IV8, in the mini-activity, introduces the wildcard "scalability". IV8 is the interviewee who calls approaches with wider, diverse engagement as leading to "robust" policies. She argues that policies often seek a global approach, which would entail the scaling of policy ideas of a certain regional or political block.
[98] Question: Would there be a difference in terms of how we would use design approaches or in the need for design approaches at national level [...] versus the higher governance level?

policy realm altogether (as e.g., IV1, IV3 clarified). It aims at including a heterogeneous set of viewpoints to sustain robust and scalable policymaking through participation at different actor levels, be they nations ("governments", e.g., IV3) or corporates (e.g. IV8).

4.4.3. Public value identification: 3 pathways to forming relations and expanding individual actor rationalities and value ascriptions (overcoming bias and bounded knowledge)

Design practice supports public value from policy by putting actors - those building and those using policy - into new kinds of relations and carefully devised exchange (as show the six extracted design practice principles in the previous section). The practice constantly strives to overcome bounded knowledge or rationality at individual actor level, including the designer's own. This section introduces this kind of 'value identification' together with the three main pathways towards it.

In identifying public value at international governance level it is important to recall that: The (expected) **core public value proposition from policy** - hence what policy should achieve strategically - is **to balance and reorder society based on a vast multitude of actors and needs** (see Table 11 for quotes/synthesis of raw data). Thereby, public value from policy sits **in *"finding balance"* by *"creating value for people or in society at large"*** (IV2) or ***"society in general"*** (IV5). Society is considered the *"beneficiary of policy"* (IV3) and balance is achieved by creating equilibria of the actors' (people's) needs therein - notably their actions and behaviors (IV1). Policy is hence meant to **cater to various lifestyles and activities in a collective**[99] (IV1, IV2). To realize that societal kind of inclusion, ***"completely different challenges"* need to be present** (in policy) - or *"represented"* (IV8) - and included to keep *"collective best interests"* (IV2) in mind. Like that, developments in policy can safely benefit *"anyone living in the country",* and *"create better quality of life"* (IV7) overall.

[99] Note: German philosopher Susanne Boshammer defines society *"not as an abstract subject but as something that is our living environment"*. It can be deduced that a given collective is thus a given living environment, a city, a village, global society (WDR 2022).

Table 11: How policy creates value (based on case III data obtained from interviews)

Interview #	*Policy's main purpose: Balancing and reordering society by targeting the affected (people, institutions, organizations)*	*Implies:*
1	Bring together **"in one direction" "a fair balance" of "different lifestyles",** by enabling and restricting actions or behaviors	Knowing what are a fair balance and different lifestyles and allow the latter to exist
2	Create value **for people at large**/ in society, **keep people's mass interests/ their collective best interests** in mind	Knowing what people desire and need at scale/collectively
3	With public money, policy is for citizens; policy is supposed **"not widen the gaps" or create harm**, through **mis-/ underrepresentation of parts of the population**	Ensuring vast, inclusive representation based on harm potential
4	**To address societal problems/ issues /challenges, abuse, and harms being** done (no matter if to a company or people) **are starting points** for regulation	Uncovering what harm is done and when it is constituted
5	**"Society in general" is the beneficiary** of policy	Building for society and with it in mind
6	**Promote people's rights and make aware of those rights**	Disposing of access to/ know about a(n) entitlement, and guarantee it is represented (by intermediary)
7	Democratize benefits: developments must **benefit the people/ anyone living in the country,** i.e. the people affected directly or indirectly, thus **creating better quality of life** **Improve distribution of wealth/ new wealth to everyone,** in particular people who **need it most** and **protect them from potential harms**	Knowing what affects general quality of life positively, notably based on those most in need (= most prone to harm)
8	**Ensure completely different challenges** (from private or public realm, i.e. nation states) **are represented**	Ensuring vast representation of challenges

Identifying value from international policy for society *at large* is proposed as building for a heterogeneous set of actors and viewpoints *and* those most in harm or least represented, and providing the latter opportunities to be heard and included. The most affected are those who might be prone to most harm or risk, or who risk not being (re-)present(ed) to voice or to express their needs or value associations (see preliminary cases section 4.1.1.1 and 4.1.1.2). Based on what can be extrapolated from the respondents, and shown in column 3,

Table 11, one can deduce special consideration to establish balance needs be given to, firstly, a potential widening of gaps or harms done, e.g. due to *"mis-/ or underrepresentation of parts of the population"* (IV3, IV4), and, secondly, wealth or new wealth repartition that might have to be improved or optimized (IV7): focusing on those who are *"most in need"* (IV7) and *"protecting"* them from potential harm in a new evolution is suggested by the interviewees.[100]

E.g., in case III practice, in the realm of emerging tech governance, those vulnerable and marginalized - and hence those policies should be designed for - are society at large. However, the instrument and vehicle to ship (tech) policy outcomes towards direct and inclusive impact for society are those building (emerging tech driven) products that society uses. The bottleneck is thus to create emerging technology policy that is implemented and brought to impact - or to "life" - by those using the policy and exploring how such rationale could play out in practice (notably by implementing policy into their products or business models).

The key contribution from design in international policy public value identification lies in helping to overcome a bounded understanding of a policy problem. This is achieved by being precise with collapsing bounded - or otherwise isolated - sets of actors, i.e., participants in the design-led policy project, and their mindsets or viewpoints - as heterogeneous they might be or turn out to be. Actors come each with their bounded perceptions, associations, or needs from or with regards to a given policy theme or policy issue. 3 main underlying pathways "design into" such bounded actor and bounded rationality gaps:

Pathway 1: Design practice supports identifying public value by **creating opportunity for relevant and novel encounters** that heighten inclusion (of voice) and surface new feedback and thus information. The latter both challenges and reduces assumptions ("closes the gap").

Respondents suggest that the value from design in intl. policy is identifying public value by crafting policy out of being closer to those who it is supposed to address, i.e., forge closer

[100] Note: Focusing on the most affected actors does not mean to build solely for the most affected. It means to ensure to ground a solution in their needs *first* (i.e. identification first) and/or *too*, considering their likely harm or that their view might be at risk not to be present or misrepresented (compare also case II, 4.1.2).

ties with the “beneficiaries”, the “companies”, the “people” (referred to as ‘vertical integration’ in the preliminary cases). Design closes gaps (IV4) and addresses needs, gives voice and secures inclusion (IV5, 8).

Interviewer: What is the unique contribution of design-led approaches in international policymaking from your point of view?

IV4: “[...] that probably has to do with the gap that I was referring to earlier, ***this gap between policymakers and the people that are subject to the policy in the end.*** *And the good thing about the design thinking type of [project III practice] is that, at least,* ***it tries to bring those people together****.* ***So that's actually already better than traditional public policy engagement.“***

…

Interviewer: Given you speak about the companies [program participants], what is the difference the program made to them from your observations?

IV5: “They [participating companies] didn't know about [data] ethics, and transparency and explainability, and also ***they wanted to get involved in public policy****. There are a lot of regulatory frameworks that* ***don't know the voice from the companies****, they only do the framework without knowing if the policy could be implemented. So, I think we all say, give,* ***give them like that voice, and to be involved in a regulatory framework. And they wanted to be involved.*** *[very affirming].”*

…

Interviewer: How are you involved with the design approach and why?

IV8: “[My role is] ***to represent, again, a wide variety of opinions and, and cultural backgrounds [...]*** *Because a startup from Germany is going to give you a completely different feedback than a startup from Slovenia, obviously:* ***The challenges that these companies are facing*** *in terms of budgeting and local regulations, scalability* ***are completely different.*** *[...]* ***we as*** *[role at host organization and in relation to project III],* ***really make sure that,***

whatever the company is doing, you know, especially when it comes to developing some global policies *within a company,* ***that all*** *the smaller member states or smaller regions* ***are represented in that as well.****"*

Design also raises awareness for otherwise dormant or only implicit values or paths (IV5, 7): IV5 highlights how new actors that were approached, in this case the companies, had a desire and sensed a need to get involved in policy making. That desire had been left unaddressed prior to project III:

Interviewer: Given you speak about the companies [program participants], what is the difference the program made to them from your observations?

IV5: "They [participating companies] didn't know about [data] ethics, and transparency and explainability, and also they wanted to get involved in public policy. ***There are a lot of regulatory frameworks that don't know the voice from the companies, they only do the framework without knowing if the policy could be implemented.*** *So, I think we all say, give, give them like that voice, and to be involved in a regulatory framework.* ***And they wanted to be involved.*** *[very affirming]."*

IV7 explicitly refers to design as surfacing otherwise hidden value associations or perceptions of a domain, which closes a regulatory void: The **design process enables to establish dedicated fora or spaces to externalize information and augment transparency.** The former **secures expression and association of opinions otherwise left unexchanged or undiscussed, which hence optimizes for a better feedback loop, according to her.**

Interviewer: What new formats do we need so that policy can really augment its value proposition?

IV7: ***"[I]f policymakers aren't even aware of the challenges of technology, they won't address them in the short term, they won't address them in the long run.*** *I feel like, yes, it's important to talk about the long run, but what I'm thinking is, can we just* ***also just start doing anything about it now. And what do we need to improve knowledge? Maybe, maybe more collaborations to understand what's going on like for the industry to kind of be able to talk to policymakers about what they're doing.*** *[...] I think it would be interesting to kind of have* ***a better feedback loop to the top, focused on AI*** *again,* ***of what's***

going right and what's going wrong, and kind of be more transparent and open about it. *Because I feel like* ***the idea around AI is*** *going around* ***'but we don't want to talk about it because we want AI to keep being adopted and if you keep talking about it, maybe they'll*** *[note: referring to the government]* ***ban it' [...]"***

The example IV7 refers to explicitly is around the business model value proposition of a business involved in project III, tied to an automated decision-making (ADM)-driven visual feature:

"... [H]ow is it possible that we're letting that happen in a technology that's not mature, that has been proven to have terrible bias against people of color in a country where most people are of color? How can we, how can the government, let that happen? And not even kind of be aware of it, like, it's, it's crazy. ***There's a huge knowledge problem, awareness of the challenges and awareness of what your companies [in the given jurisdiction] are doing."***

Design practice enables a wider array of encounters between actors from which one knows they are relevant to be involved in policymaking. That encounter takes place vertically, between policy builder and implementer (e.g., companies), and also ensures a wide inclusion of diverse perspectives and viewpoints (heterogeneity). In addition, design establishes new encounters that encourage and open doors to contribute to policy making (i.e., empower), as e.g. IV5 underlined as particularly worthwhile for case III participants. First and foremost, design caters to spaces or meeting points that allow for a different kind of encounter to happen and, with the former, the building of a different intersection and crossing of actors. Design hence allows for the identification of both conventional and new opinions and viewpoints, and thus contributes to identifying actors' value associations with regards to a given policy theme to be governed.

Pathway 2: Design practice supports identifying public value by **providing decision makers** - regardless of policy or product domain - **with new and deeper situational awareness** and understanding.

Design practice's value-add in intl. governance lies in providing outside-in and complementary perspectives that constitute feedback to decision-makers **about what more or else to consider in a particular space of activity**. Be it for policy in the public sector or product making, mutual understanding is achieved through debate or *"discussion"* as IV5 calls it. Design helps validate hypotheses or directions early and throughout: IV2 and IV3 highlight that design reinforces looking at public policy as a dynamic, iterative process. It helps validate inside-out thus "internal" - i.e. a single actor's or decision maker's - *"hypotheses"* (IV2). Design hence **enables to think in beneficiary instead of a given policy maker's terms only.**

Interviewer: Could you describe to me what value design practices actually add in your particular role, and in your everyday work or context?

IV2: *"Yeah, they, I think, quite simply,* ***they add insights*** *that* ***you can bring back into your like privatized setting and say, we need to do more on X, Y, or Z,*** *and also, sometimes those* ***views will represent quite an extreme piece of advice at the design level****, which is very difficult to implement. But, to kind of …* ***I think validate over time that it is the wish of people*** *for instance for more algorithmic transparency and control. It* ***validates internal hypotheses about what people want and need*** *[...]."*

IV3 underlines, in addition, that public policy and the process of creating policies can be seen as dynamic and co-created, based on exchange: By listening to beneficiaries, decision-makers are able to question what they are thinking and change it to the benefit of the people to serve. **This kind of alteration of an individual or "inner" value association or perception is a form of public value identification.** It entails a transformative change of perception of what constitutes public policy or the understanding of the role in creating balance in society (the central value proposition of policy; recall from introduction to this section). Design opens the gateway for this alteration of a value association or relation with a given policy theme to happen in an individual actor:

Interviewer: What do you think is then the role of that particular approach, of that design approach, today in policymaking … What's the legitimacy of that?

IV3: *"[...] I think* ***it's precisely to be able to incorporate what is happening with the beneficiaries of the policy during the process.*** *If you remember that, at the beginning, that*

one of the things that I think might change is ***listening more*** *to citizens,* ***this is an approach that could help to do*** *that. Because public policy is not something that you do at a desk in a nice office and then roll out without knowing what is going to happen, but it's something that* ***you co-create and co-build with the beneficiaries at the same time****. It's a completely different way to do things."*

IV5, when asked explicitly about the difference that design practice of project III made to public policy in the region and to the companies (thus the impact of the design practice to the program participants), highlights how it enables and facilitates conversation (*"discussion"*). Through the former, companies could create new knowledge and gain deeper awareness (*"learn"*), while at the same time support policy in its ultimate practical implementation:

Interviewer: What do you think has such [design led] program contributed?

IV5: *"Well, to* ***have more information about regulation and public policy focused on technology and artificial intelligence.*** *In [name of region] it is a topic that* ***is not that discussed.****"*

…

Interviewer: And if you had to recap, what is the difference that this program made to [the region B program participants]. Can you describe that from your observations?

IV5: ***"They [participating companies] didn't know about ethics, and transparency and explainability,*** *and also they wanted to get involved in public policy. There are a lot of regulatory frameworks that don't know the voice of the companies, they only do the framework* ***without knowing if the policy could be implemented."***

In addition, by bringing a diverse set and affected stakeholders together in productive exchange, design **enables extracting the key issue to tackle, making policy thereby more *"concrete"*** (IV7). Project III shows that, through applying design, a context-dependent or -considering understanding of a given policy theme can emerge for each involved party. The ultimate outcome from the process is thus *"rich know how"* (IV5). The former is considered as particularly relevant for compound domains, rendering transparent and concrete what the

outcomes are from a given design practice exercise and thus the given policy expectation (such as transparency in building AI, in case III; IV7):

Interviewer: If you were to sum up, what difference do such design-led approaches make in policy. Any particular impact they're having?

IV7: ***"I think it allows you to understand the problem a lot better. [...] because, maybe, the problem you identify isn't the key issue. It allows you to identify what the problem is and be able to propose policies to solutions around it*** *that really make sense,* ***because you've involved the different people who will be affected by it*** *- kind of like the stakeholders of that policy in the conversation around what you should be doing. And if you don't do that, you're just creating policy in, like, blank space. Who knows, who knows if it's a problem?! [...]* ***it just brings public policy closer to people. [...] yeah it just kind of closes that gap that currently exists."***

Design practice supports policy officers' decision making by raising additional awareness for and understanding about a given policy theme (e.g., responsible building of AI or emerging tech). This is true for both those making policy and those building technology that should adhere to the guidance of that policy and satisfy its expectation *("bridging the gap"*, IV4, IV7). In addition, design practice makes both realms - policy and product building in a given domain to govern (automated decision-making in case III) - more relatable to the opposite realm or party in that realm: It allows associating concrete action to concrete policy guidance or building policy around concrete product activities. By this it supports practical implementation and secures obtaining *"rich"* knowledge (IV7) about implementation and, through the former, validates policy (*"reality check"* (IV4); design through policy). That awareness-raising contributes to identifying what is valuable to be introduced or built towards or for in society.

Pathway 3: Design practice supports identifying public value by increasing decision maker capability to **take agency for societal balance in their respective decision-making cycles** and practices.

Design practice empowers *all* involved actors to take concrete action concerning the policy theme designed around, which triggers a sense of accountability and ownership for the policy theme. An altered value perception gets established - be it for product or policy makers' making of decisions.

IV6 highlights how ongoing collaboration under a design-led approach makes them *"accountable"* as policy officers*,* as she says, for good policy decision-making:

Interviewer: How do you make sense of whom to involve [in the co-designing party] and how do you keep them in the loop?

IV6: "[T]he way of making us accountable is ***to actually select the profiles of the citizens, the citizens that should be making us accountable****, [refers to representing] the citizenship. So for us* ***it's really important, as [anonymized institution name], to make a work committee that is informed and in the loop, taking account of what we do,*** *[...]* ***All the time it is really important to work side by side to make sure that they, the citizens, are represented and that they are heard.***"

IV3 refers to the importance of co-building, and how design-led approaches simultaneously create impact as they unfold. With that, greater impact from decisions as much as accountability for decisions and impact emerge:

Interviewer: Is there any other difference that you think such design-led approaches would make in policymaking, or anything else that comes to your mind?

IV3: ***"I think it gives a little bit more accountability to the policymakers, because they will be scrutinized at the same time the policy is being implemented.*** *When you come to think about it, a policymaker could be doing a reform today to be implemented in three years, so maybe that person is no longer at his or her post. But if they are doing it at the same time, he or she is the one to respond about that reform.* ***So that could be another good thing drawn from that approach.***"

Accountability is not relevant in relation to policy decision makers only: Accountability gets instilled and initiated across *all* the involved parties in a design-led process in policy. Design practice hence establishes - and perhaps even ups - a tangible stake in the given

policy theme. Agency at individual level sets in, for product and public policy decision makers alike. E.g., IV2 estimates that design processes amplify accountability both at policy and product design level (she works at the intersection with the design-led initiative at case III):

Interviewer: What differences do design-led approaches make to policy? What practical programs do live up to the differences?

IV2: "[...] I think, you know, reflecting on a very humble example in [host corporate organization name] like with [design initiative name], versus a much more understandably kind of open civil society or supranational initiative like UNICEF: ***I think ultimately you end up with questions like, you know, how was, how are these insights implemented, what are the concrete changes that you made. Where were you going with it and how did the co-design piece deflect or inform B state that was not only informed by the end user, but […] bettered their outcomes. "***

Interviewer: So you would see the latter - this question of 'what was the impact' - as being a question that will ultimately be more posed in your context rather than in the UNICEF AI context for instance?

IV2: "I think it's valid for both. But, but a bit ***UNICEF [...] set out to create guidelines that are probably not looked towards for granularity. They look for alignment with the rights of the child and very laudable outcomes****. I'm not trying to say our task is harder, because I think that's also a fallacy. [...] I think tech companies are very happy to try and copy something like that and I think that's part of the problem: it's that* ***we, you know we often rest on our laurels, thinking that, you know, having checkboxes, some kind of format for ethical design or code development, is sufficient,*** *but I think increasingly we're under pressure* ***to demonstrate throughput, the so what, the okay, great that you worked at scale, we know you work at scale, but besides the co-design how this really influences your projects or products, so, so ultimately we can judge, we can judge whether you're not only compliant but go beyond it."***

IV7 witnesses participant, partner, and host organization accountability through the case III design-led approach. She views the participating companies as really open to feedback, to doing things well, and being **committed to having a positive impact on society.** She speaks to participant, partner, and host accountability and addresses the project`s societal

accountability, from the angle of visibility and dissemination, i.e., transparency of the program approach:

Interviewer: What value does such a project bring to public policy, now that you've seen it unfold in practice? What do you expect?

IV7: "[...] it's gonna be very concrete, [...] ***So, I think, that was great,*** *working with those companies* ***who are really open to feedback, to doing things well*** *and* ***having a positive impact on society.*** *And they didn't have bad intentions, they just didn't know, didn't check their bias in their system****, helping them just to have an overall more humane use of AI systems. [...] And then hopefully the regulator.*** *[...]* ***I do think that this report will help him*** *[the lead at the co-implementing regulatory/government partner organization]* ***understand challenges more deeply.*** *And then it's* ***going to be available publicly****. So hopefully* ***people can read it."***

To sum up public value identification and its three pathways:

At collective value and public value output level, the key strategic value proposition from international policy is identified as upholding balance in society - thus balancing actor viewpoints in a selected societal sub context - while building for society at large. Design supports public value from international policy by putting actors - those building and those using policy - into (new kinds of) relation(s) and carefully devised exchange, constantly striving to overcome bounded knowledge or rationality (including the designer's own). Identifying public value through design starts, first, by identifying the actors ("old and new"; see also preliminary cases, section 4.1) who will express their needs. Second, design lets these needs evolve and merge. A collectively valuable outcome of policy is balancing - maintaining or changing - the relations at origin of the needs expressed so the latter can get co-owned by the given, collective living environment at hand. The balancing act surfaces new and key knowledge - that otherwise remains covert, bound, or hidden - to amplify the content that is created. The former subsequently underlies policy decision-making (compare section 4.2, conclusion of preliminary cases).

At a given individual actor, a transformative change of perception and relation with regards to the policy theme takes place, and - with the former - an altered understanding of the role

in creating value for society at large (ownership or 'accountability'). The former lets public value emerge, as it gets identifiable and "relatable to" for the individual actor, contributable to through their own decision-making sphere. **In other words: If public value from policy is to enable balance and reordering of actors in society, public value starts at a transformative change of perception of how the individual actor in a given policy - thus societal - circumstance contributes to creating the very societal balance**. Design-led policy incites individual actors in a given societal circumstance to contribute actively to creating balance. Through a transformative change of perception of public value from a given policy theme, and the understanding of one's role in creating balance and thus contributing to the public value, the notion of public value gets concrete and arises for each actor (individual) - either explicitly or implicitly (through the act of the intermediary); it becomes relatable to and hence "real", more tactile and thus concrete. Design practice enables alteration of policy perception and individual value associations as it lets a given actor *identify with and identify* value from otherwise decontextualized and abstract, seemingly irrelevant subject matter. **The former constitutes itself as particularly relevant for policy themes at international level, given their importance to tackle large-scale societal issues that seem decoupled from the individual actor otherwise.**

4.4.4. Public value creation: 5 rationales to forming interrelations between individual actor realities and collectively held notions of public value (as they emerge from design practice in intl. policy)

The previous section presents how public value is identified with the help of design practice. Design makes public value identifiable and relatable to in a new manner for each actor involved, through interaction formats *amongst each other* (compare Principle I: Initial coalition and theme; Principle II: Inclusion with focus on the affected, Principle V: Integrity; Principle VI: Intermediary) *or with the theme itself* (Principle III: Consistent focus on starting point (with an open end); Principle IV: Success moments and enhancement of given actor practice).

The next stage, once an opportunity is given to identify public value, is to *create public value (out of the values identified (with))*. **Public value creation through design practice seems to depend on the context of those who make policy: Individual actors' realities and value associations are turned into public value based on different logics (see forthcoming 'rationales'), depending on the policy practitioner who deploys the given design practice. Different "policy maker or practitioner personas" seem hence to exist in the adoption of design at intl. governance level.**

To inquire into that design-led process behind creating public value, the interviewees from the international policy domain were asked to build an archetypical policy[101] based on public value and design considerations (see chapter 3, Methodology, 3.2.1.2). The findings thereof reveal: **There is no one policy-making process or consideration that a policy decision-maker generally follows.** It was possible, however, to extract **5 main indicative rationales or tendencies.** These tendencies describe logics behind how policy is built and, hence, how public value gets constructed through them and at the same time confined. The latter, the limitations, suggest particularly valuable entry points for how design practice can support policy in its value creation, based on the initially discussed, six principles (see 4.4.1).

Rationale 1 (R1): "Assess and solve the problem" - The (non-designer) public policy officer/ public policy expert

How to make policy valuable - Logic: "First, identify what problem I need to solve ('the public problem'), then assess whether and for whom needs are addressable by solving the problem (public value, capability, and legitimacy)."

[101] 'You are asked to build public policy from scratch. How would you prioritize the following elements and reflections of yours?' Elements: Public problems, public value, capabilities, legitimacy, plus a wildcard (i.e. free category fill in by respondent) with reflections; e.g. "Public problems: I need to look at the challenge I am trying to solve for in a given policy context"' - Note: Reflections extracted to keep footnote concise; see section 3.2.1.2 to view the full exercise.

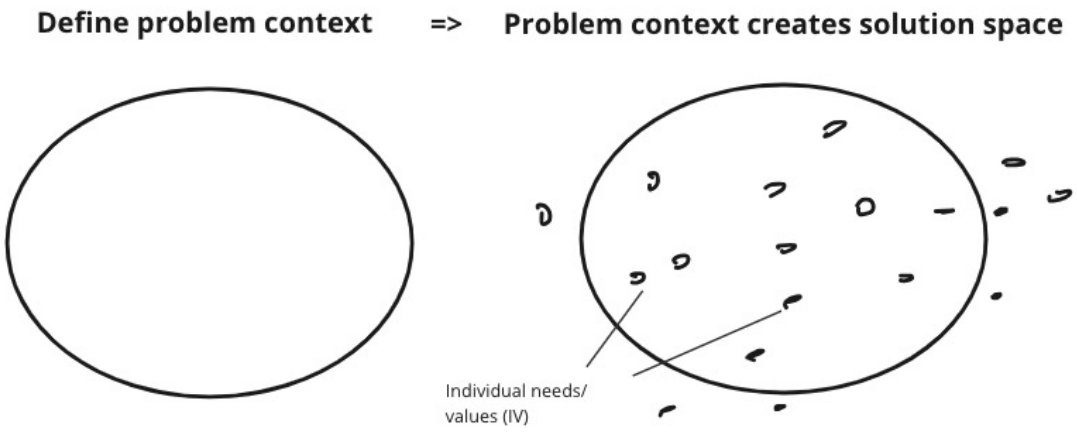


Figure 16: Illustration of Rationale 1 (R1) behind building policy and influence on potential policy solution space

Underlying quotes:

IV3: "[...] if you're a policy maker **you should be listening to what is happening.** [...] **So, you have to identify the challenge first** by listening to your community. [...]. So that is the problem, and **then you can go there and see who would be the target population for the public policy that you will be building. "**

IV4: "[B]ecause there is [...] some harm [i.e., adverse consequences from some misbehavior] [...] you know, **there are harms and we need to regulate this [...].** So that would be the starting point [i.e., harm to some affected group is a starting point of regulation]."

IV6: "[..**W]e have to have some kind of evidence,** this evidence may, in many cases come from a statistical approach of it, and this statistical approach, **it should be studied or tackled or validated in some way** that it makes sense that **the information is actually representing what we think is a problem."**

IV8: "[...W]hen is the problem you know, big enough to be addressed?! But to put it this way, **there are problems everywhere, but at some point, one just becomes too big, and then [...] you have to address it**, whether it's misinformation or fake news or, or companies having too much power or too much illegal content or too much control, too

> much bullying, too much … inequality. When this reaches this [...] point - which is then the question is, how do you assess when the point is reached and so - this is a political decision. […] Politicians are elected officials. **So, this should come from [...] the people. We can also go backtrack that direction."**

Implication: The problem context defines the realm of needs that are addressed (as illustrated in Figure 16 above); and public value depends on the most "valid"(ated) problem.

Who: Established policy professionals in the public or corporate domain, who either work with design-led programs or tools to create policy proposals or are supportive of and actively enabling design practices (n= 4, respondents IV3,4,6,8).

Features:

- Come with strong roots in and experience in combining policy with stakeholder engagement and knowledge transfer (explicitly design-led or not)
- Generally believe in citizen involvement and listening to and collapsing gaps to understand problems
- All 4 are working out of either the public (2 of them) or private sector (the other 2), on similar policy themes (e.g., digital transformation related)
- The four are neither designers nor specialized design coaches or facilitators (i.e., in charge of defining methodologies or leading the design approach) themselves

Contradiction: It seems, according to the four, that **policy's practical implementation** is what impedes the needs to be addressed or problems to be solved, - i.e., going from paper to implementation of policy is what causes an issue. **They seek what's practicable, but they quote exactly the practice and/or implementation - and thus problem-solving - as a key failure in policymaking (despite their focus on that very problem-solving and assessment).**

IV3: "And from my experience now with data for example, they saw, they have all the data. So, they say, okay, I have data. So, I need to do something with it. Okay, but is there a problem you want to solve?! Or it's because, - so sometimes, **policy makers have the solution ready, but they do not know if they have a problem that could use that solution.** That is one thing. The other thing is that the incentives sometimes are not aligned. [...]"

IV6: [Interviewer: You said, If policy doesn't have a public value, it is never solving the problem. Can you explain to me a bit more the relationship between the problem and the value?] For sure, for instance. If I **don't make sure that the programs that I implement so that** these kids that have poor families have the opportunity and the chances for not being poor [note: a policy example she gave and refers to] **I'm not solving their problem.** [...] **So, if we don't make the life of the people better, it doesn't make sense to try to tackle a problem because you're not solving.** *[…]* **and in order to tackle it, you have to give value to the people and to solve problems to the people.** Not to make it worse or more difficult."

[Interviewer: And maybe a bit of a provocative question: Do you think that policy lives up to this?] "**I think that when we plan it, it's, like, really nice** and we are like 'this is our best wishes list and this is what policy should be'. **And many times, the problem is not the policy. The implementation of it is a problem. And that's where I think that we get lost. So, the really hard thing is not thinking of the policies, it's actually implementing it and mak[ing] sense of it."** *[inhibition] [implementation is core concern, compare with wildcard: impact measurement]*

Entry point for design to support public value creation: **For rationale 1, design practice could support public value creation from policy if it augments practical policy "implementability" (= ability for practical policy implementation), thus placing policy in the practical context and closer to the challenge and the unpacking of the problem.**

Additional remark/ancillary finding: Given the problem context is constraining and hence defining the needs, impact creation might not be supported if the problem context is wrongly

defined in the first place (problem context conditions needs), and/or if no room for iteration to adjust the problem context is provided.

Rationale 2 (R2): “Build for users - identify them and their needs” - The user-centered policy practitioner

How to make policy valuable - Logic: “Understand first whom and whose needs I need to build for (public value), then secure buy-in (legitimacy) and resources (capabilities) to realize the former; once that’s done, double-check whether and how I can solve given challenges (public problem) in the context of the identified needs.”

Underlying quotes:

> **IV2:** [Question: Why would public value come first?] “So often I think there's like, I think like, public problems … it's huge, right, and **we need to have a good set of problems to solve, but often I think there's a mismatch in terms of public value** [...]. **I don't often see granularity of where the policy is, you know what, what the policy is being built for.**”
> [...]
>
> "And **I often think that that audience piece, and the buy-in piece, is missing.** You know, you do see efforts like European level to or a national or some national institutions to be more transparent around consultations, and who's being involved in what, but I still think there's a lot missing from that process. Just clarity from the get go, in terms of what`s the problem it`s trying to solve, like **not only the problem that it's trying to solve, but also the value and the legitimacy piece**. [...]"
>
> **IV5:** [Question: Why would public value come first?] "**I need to make sure I understand who I am building the policy for.** [...] **I think that is the most important to really get to know the target, and to get to their minds.** [their =

affected people by policy; understand their challenges, experience, priorities; give them a voice]."
[…]

[Interviewer: Like overall when you, when you saw this task, and when you were asked to fill it out, can you describe me a bit how you felt in that situation? And how you made sense of [the task]?] “Like putting the, the elements from the highest to the lowest. I saw the definitions - they are really good definitions. **Actually, I thought about the program,** you know, like a, when **we defined the program and how we wanted to implement the program. I think that I put it in that order. [...]** so yeah, I thought about [design-led program name, project III], when I filled this in.” [note: this means interviewee applied design logic to policy; note: first time interviewee works with design, she was in charge of implementing the program operationally based on researcher’s design practice and confronted with that task for the first time].

Implication: Identified needs create/define the solution space.

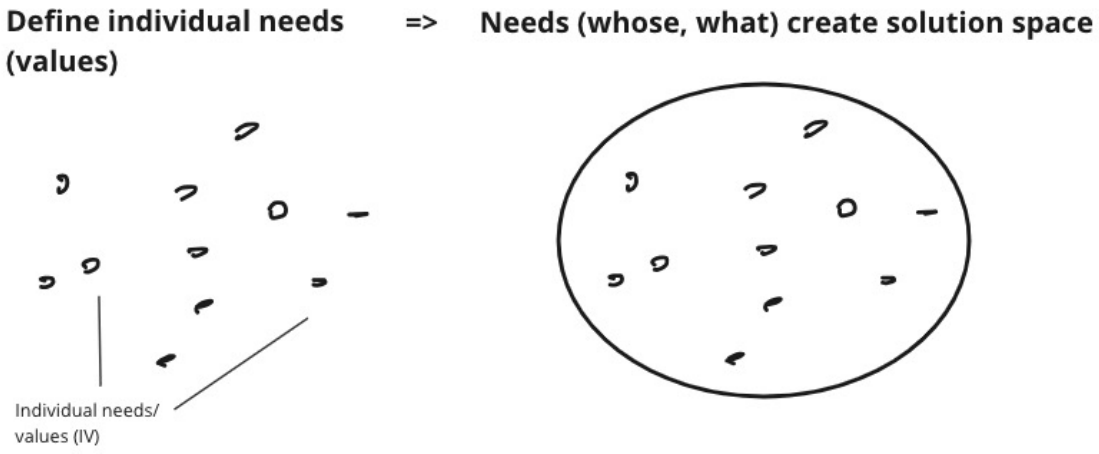


Figure 17: Illustration of Rationale 2 (R2) behind building policy and influence on potential policy solution space

Who: Bringing a policy background (both through studies and on the job), the policy practitioners actively run and facilitate design-led programs in policy. They have (been)

trained to run design on the job, bringing more or less profound experience, respectively, in replicating and/or setting up design practices (n=2, respondents IV2, 5).

Features:

- Both are convinced that **policy lacks focus** (*"granularity"*, IV2), namely **around whom it builds for**
- Policy brings lack of understanding of needs and purpose, as well as clear targets for who/ what (values, needs) it serves
- The two do not work or operate out of the same industry/sector, but both do work through people-/human-centric crafts and design practice in the governance of emerging tech, adjacent to public policy
- They are opposite age, gender, and come from developed and emerging economies, respectively

Relation Rationale 1 and 2:

- As opposed to R1, and albeit bringing the mindset that policy needs to be built for people, the practice and logic behind how to build policy differs:
- While R1 builds for needs in a given pre-defined problem context, R2 builds for problems that arise in a given needs context (see Figure 16 and Figure 17 above for R1 and R2, respectively).
- In R1, the link between problems and people is less explicitly made than by R2 respondents: **Under R1, problems arise from data or evidence, whereas under R2, problems arise from needs of the policy-affected/societal members.**
- R2 respondents combine design practice with policy in an active practitioner role, as opposed to R1, who witness practical implementation as a hurdle:
    - The author as the design practitioner herself identifies with R2: She crafted the design practice, which supports the relative ease with practical implementation.
- R2 identifies people-driven needs and tries to learn how they can be catered to with the legitimacy and capabilities at hand, which creates a solution space (i.e., the problems to solve) that arises out of the needs inquiry itself.

Entry point for design to support public value creation: **In the pattern 2 context, design practice could support value from policy through higher centeredness in and focus on**

those whom policy is built for and their respective needs. An ancillary value would be making policy more relatable to, to better surface the needs from policy by those whose needs are un- or insufficiently met (harms, misrepresentation, etc.) (compare public value identification, section 4.1.1.1).

Additional remark/ancillary finding: Individuals do not need to understand the given policy problem overall, i.e., to its full extent - e.g. “new tech”, “education”, “health” as such, as a global governance issue. Individuals merely need to understand how *they* relate to the given policy theme and have an opportunity to express the former in relation to the problem (thus obtain an opportunity to express *their* value associations), in order for the relevant needs to be captured.

Rationale 3 (R3): “Pursue what secures political majorities or unity” - The non-designing politician

How to make policy valuable - Logic: “Understand first what problem I need to solve (policy problem); then check whether resources allow me to solve it and how (capabilities/know-how about the problem). Third, find out what needs the feasible solution to the problem suggests addressing (public value) and ensure (how) I can legitimately communicate to do so (legitimacy).”

Underlying quotes:

- **IV1:** “From my understanding, **I need to be aware of a kind of a problem**, and **then the idea of solving it** … **I have a problem** [public problem], I have to solve it, **I need some help** probably, so the **experts**. [capabilities] And then of course I have to understand the public value [public value] also out of it and … **yeah**, **how can I come forward** [legitimacy].”

- IV1 sees design as **"too noble of a word"** for policy-making: in fact, she defines policy-making primarily as a task of majority-seeking and compromise-finding as well as putting the former into legislation; the **compromise-seeking part, she underlines,**

might be what one can consider "creative" and the more designerly craft of the profession: “Because for me [legislation] is just regulation and finding majorities. So, designing seems that it has a more creative part in it. So it is creative partly, [...] you have to find majorities, otherwise you can’t have a kind of designed legislation.“

Implications:

- The problem context (similar to R1) together with the capabilities (i.e., the solution proposal, based on expert help) define the value proposition (needs-based) and hence create the public value proposal
- The public value - arising from problem context and capabilities - defines whether there is an actual possibility towards a “legitimizeable” or legitimate policy proposal
- A legitimizeable/legitimate proposal is conditioned by obtaining a (political) majority

Who: Bringing a long-standing political and legal background, and operating out of it, the R3 persona actively collects policy content and (co-)decides on it in a democratically legitimized and majority-driven manner (n=1, respondent IV1).

Features:

- Just as R1 delegates, R3 does not believe in idealistic but *practical* policy proposals: In the IV1 context, this implies that policy needs both **1. be oriented towards solving problems** (policy problem), like in R1 and **2. must create majorities (legitimacy) in the political sense**
    - Note that under 1., R3 is less concerned with practical impact than with the possibility of resolving a (the) problem
- R3 perceives of herself and politicians or policy makers as experts not in content but in coalition-building and compromise-seeking, which she refers to as *“seeking unity”*; this explains her focus on building proposals that obtain majority (and hence are “legitimizeable”)
- To this category, public value seems to be a sub mechanism to legitimacy: i.e., creating value from a policy proposition is to convince in the process of majority-seeking, i.e., to legitimize the proposal
    - The logical consequence that follows is that **public value is created from the stance of what is “legitimizeable” of an initial proposal**

- The fundamental difference in letting value emerge from majority-seeking versus letting it emerge from an individual to collective value definition (as in the knowledge gap) is that the former need not necessarily involve an external-facing policy recipient (the policy user or end recipient). Instead, the value emerges out of collecting perspectives *inside* the political system (i.e., seeking the majorities). **What follows is an inward-looking stakeholder focus** (see contradiction one as follows).

Two contradictions:

- (1) Emphasizes a heavy problem-solving focus that: 1. **Comes at a cost to vision-setting** and asking what is valuable, or where to go with a policy (sacrificing the forward-looking intent; compare with preliminary cases, notably 4.1.1.1). In fact, when asked, IV1 cannot explain who in his policy environment is responsible for setting visions, providing direction, or determining what is valuable; 2. **Is no longer practicable**, given the number of problems policy is occupied and confronted with. Policy problems amount to a never-ending list; in the interview, IV1 reads out loud a long list of policy problems she is to tackle.

- (2) **Majorities might be what are considered important in politics or producing legislative proposals. This is what IV1 describes as the compromise-seeking part. She however relativizes that majorities (= unity in values) are not sufficient**, stating that *"[c]ohesion in EU has a value, but does not serve anything if there is nothing prepared to be followed up with."*

Implications: Majority seeking - the 'shall I/we solve' - is a building block of legitimacy. Majority-seeking comes last for R3 in her rationale of policy generation, preceded and conditioned by 'what to solve' (problem), 'can I/we solve' (capability) and 'what to solve for' (exact value or need hope for to arise). The latter shows parallels with the policy cycle model's first 3 stages *agenda setting* (what to solve), *policy formulation* (can I solve and what to solve for) and *policy decision-making* (legitimacy), which are detached from the implementation and evaluation stages (This builds upon what was found in the conclusion of the preliminary case findings, section 4.2).

Entry point for design to support public value creation: In the R3's context (as-is), design practice can support value from policy if it augments practical policy implementation and

user focus: Key meaning of such practicability in R3 context is however not problem solving by creating actual impact on the ground (as it is for R1). It means supporting compromise-finding, i.e. building "unity", in other words, building a public value understanding by a given collective in the political sphere.

Additional remark/ancillary finding: The respondent highlights the tradeoff - or perhaps failure - of policy in the current context of problem-fighting over identifying needs. What is publicly valuable from a policy and thus a societal recipient moves to the background of attention. This directly links back to the already discussed R2 and R1: R2 already shows how the realm of needs and, with it, value differs from a problem-centered focus in R1 (see Figure 16 and Figure 17 earlier in this section).

Rationale 4 (R4): "Pursuing what's meaningful", i.e., is needs-based and needs-addressing - The pragmatic liaison civil society advocate

How to make policy valuable - Logic: "Understand first who can lend commitment, credibility, and authority to a policy proposal (legitimacy); then determine whom we need to build for (public value), which will reveal the challenge (policy problem) to work on. Finally, make sure I generate capacity, i.e. the know-how and the resources (capabilities), that will show how I can best solve the latter."

Underlying quotes:

- **IV7:** "[I]f you don't understand the problem [...] that you're working on, then your capabilities are useless; if you don't understand the value that you're, you're building and for who, kind of like, identifying the stakeholders, then, what problem are you even talking about?! And if you, you've identified the stakeholders, you've identified the problem, and you've got the capabilities to do it, that's great, but **if you don't have legitimacy, it's gonna be useless.**"

Implications:

- Suggests that the actors involved, and the relations one can build between them, are a first crucial stage in creating public value.
- Proposes iteration as an approach to solve for the need, once credibility/legitimacy is defined: **Capacity and know-how,** thus **the actual method - aka practice - and the 'how to solve' for the identified need, come last**.

Who: Pragmatic provider, dedicated to coordinating and connecting all actors involved in a given policy topic, with their given viewpoints, in order to obtain a concrete output that serves an initially defined, greater societal purpose (n=1, respondent IV7).

Features

- **IV7 combines the aforementioned 3 rationales,** the designerly needs-oriented (R2) with the politician's compromise-building view (R3), to craft policy that is practicable for its implementation stage (R1)
- Part one of IV7's input is in line with R2's rationale: The value creation and user-centered focus set 'values' equal to stakeholders and equal to problems, i.e., problems originate out of stakeholders and their values, thus must stem from a well-defined set of stakeholders.
- **R4** adds, however, the piece of legitimacy, thus the focus on who sits on the table: **She combines design facilitator stances (prioritizing the user-centric view, R2) with the policy official views for problem-solving of a policy issue (R1; implementability and impact) and majority seeking (R3).**

Additional remarks: R4 hence 1. takes existing political conditions as a given in policy and does not try to artificially modify them but 2. builds on top of them or works around them (around the policy context), in line with a value-based and user-centric approach and legitimacy orientation. **She suggests integrating design practice into the policy context, combining the practice with the given policy context.** Multiple references throughout the interview confirm the former as well as point to her **commitment to do what it takes to create the meaning from policy set out to create; the latter hints to the long-term, strategic policy view that R3 mentions as absent:**

- *"[S]o that last one comes from painful experiences that we've had at [anonymized interviewee organization] where the government changes and things are just completely dropped. [...]* ***Rather, we continue our mission with other actors, [...]*** *you know* ***it's like well, the government's out but we're gonna keep moving forward [with other actors in the ecosystem]*** *and the moment they [the government] want back in we'll welcome them with open arms and we'll be like* ***'this is everything we've done since you ignored us'*** *[...] keeping them accountable, and supporting them, when they [the government] start to care again."*

- The wildcard IV7 adds to the mini-activity points to contextual awareness: Wildcard = Sustainability/continuity; i.e. ensuring that the **actors that can provide the policy with continuity** are being included; this considers that the government actors change with time, as do their priorities: ***"I'm kind of making sure that you're doing things in a way that can be continued.*** *So, because the government changed here, and the new government just doesn't care about all of this. And so, a lot of our initiatives, can't move forward. [… If] I don't think that's going to happen,* ***I think that's going to happen within the next government*** *[...]"*

- *"So, but also* ***realizing that it's important to work with*** *[name of case III host organization] and companies and big tech,* ***if we want to move forward in this conversation,*** *like they have to be in the conversation we have to stop acting like the big bad wolf. No,* ***this is how the world works right now*** *and ever and if they're such an important actor they need to be in the conversation, defending that, that viewpoint."*

<u>*Entry point for design to support public value creation:*</u> **R4 context suggests that the practice, the design of how to obtain value, becomes front and center. The R4 approach remains a stage-setting and iterative approach, built to summon, pair, and relate (orchestrate) required actors around a given policy issue. The design practice - thus the practice itself of how a policy is being crafted - becomes the process that orchestrates legitimacy, capability, and values, originating out of and interwoven with the involved actors.**

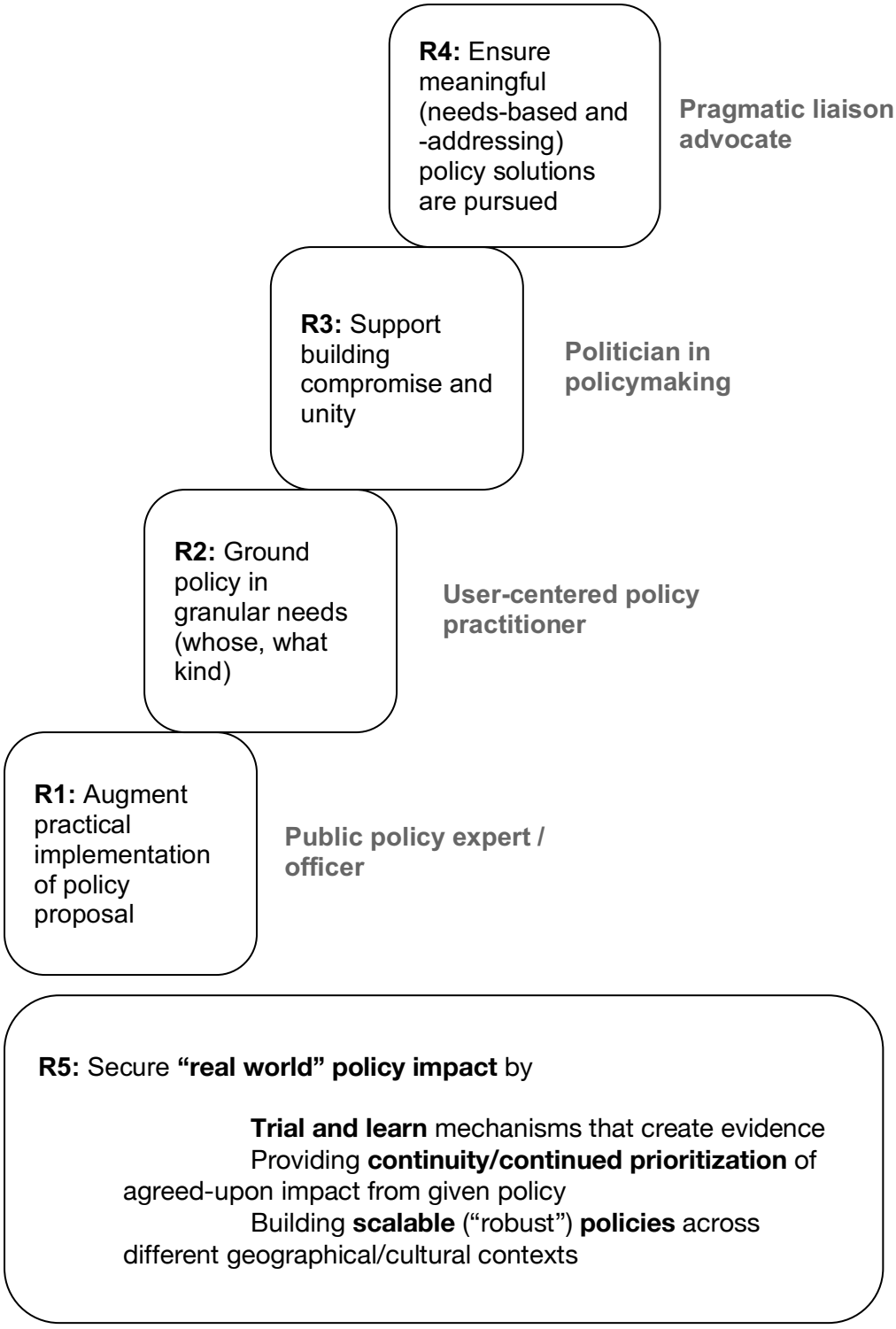


Figure 18: Suggested support from design practice in public value creation from policy. Five policy-making rationales (R1-R5) revealed in the international governance context.

Rationale 5 (R5): "Validate the policy idea through real-world insight captured" - The missing link in policy creation

Rationale 5 is a topic and content-relevant rationale. It spans across all interviewees and policy-making personas.

How to make policy valuable - Logic: "Generate additional insights and evidence about value associations as the policy solution is brought forward, to ensure it is evaluated and iterated, and assessed for impact already at proposal stage."

Who and features:

- Interviewees indicate 'Wildcards'[102] that speak to securing "real world impact" from policy
- The former can be generated, as can be derived, by three main mechanisms, namely:
    1. Through **trial and error and applied evidence creation** (e.g., IV3)
    2. By **providing continuity and continued prioritization** of an agreed-upon impact from a given policy (e.g., IV7)
    3. Built-in consideration to make **policies that can scale across different geographical and cultural contexts** (*"robust"* policies) (e.g., IV8)

Implications: Evidence stemming from real world context is integral to public value creation from international policy. This supports that design's value-add to public value creation from international policy lies with grounding in wide horizontal and vertical actor- and thus context-specific value associations:

- For R1 success comes from translation from proposal into implementation, which speaks to aforementioned mechanism 1, heightened focus on iteration and trial-and-error approach

[102] 'Wildcard' was a free form category in the process of building policy in the mini-activity. Respondents could fill it in if they needed it. See section 3.2.1.2.

- For R3 and R4, practicality comes from success in compromise-seeking and unity; which speaks to mechanism 2, reinforcing and working with and around continuity
- For R2, success comes from groundedness in and granularity of user needs; which speaks to mechanism 3, ensuring robustness and scalability

Entry point for design to support public value creation: **Rationale 5 suggests support from design for policymaking in the international governance realm stems from iteration and cross-checking between solution concept and real-world context and needs. Such an approach crafts a policy solution toward impact. It triggers an inbuilt in-context validation in order to satisfy needs and bears an inquiry into whether it satisfies needs in the first place.**

To conclude this section: Design's potential to support public value creation from policymaking in the international realm can come in different ways. Depending on the policy professional's context in which it is deployed and on the intermediaries (actors, policy professionals) that deploy design in their policy context, design can (see also Figure 18 further up):

1. **Augment practical implementation and impact from policy** (R1: *"Assess and solve the problem"*)
2. **Put people and needs policy builds for front and center** (R2: *"Build for users - identify them and their needs"*)
3. **Enhance alignment and unity around a particular vision** (R3: *"Pursue what secures political majorities or unity"*)
4. **Suggest meaningful policies that simultaneously secure early legitimization** of a policy theme (whereas the latter can or cannot be politically approved through majorities at the time of proposing the project) (R4: *"Pursuing what's meaningful"*)
5. **Enrich a policy proposal with real-world circumstances from the get-go and throughout** (R5: *"Validate the policy idea through real-world insight captured"*)

Overall, it is regardless of the sector, seniority, design exposure, practical experience, or training - thus regardless of the 'policy-making personas' representing typical policy-making

pathways or origins in the intl. governance context - that policy decision-makers try to build for valuable outcomes for society.

It is also regardless of the sector or industry involved in intl. policymaking that departure points for building public value - i.e., merging an individual into collective representation of value - are constituted. Crafting such collective value proposal gets, however, approached in a different fashion, depending on the policy manager`s context. **To create meaningful policy proposals** (compare Rationale 3, section 4.4.4)**, design differentiates between including individual needs based on the most affected (in content creation), and the needs of the internal, political final decision-making cycle.** Design in policymaking at intl. governance level is thus political in a societal but not in a party-political sense: It helps craft propositions for where society should go, thus collective value orientations and aspirations. It does, however, not interfere with party politics in the strict sense (compare preliminary case findings 4.2, for instance).

Leveraging design practice at maximum for intl. policy might require a mindset shift, away from a problem-based inquiry that defines potential needs (R1) to exploring needs that define a solution space (R2) (see and juxtapose Figure 16 and Figure 17). Legitimizing from the start the investigated need and proposal to solve for it, grounded in society and real-world context, is essential, as R4 suggests. Under such a design-led approach, capabilities no longer mean “feasibility” in the strict sense, as R1 or R3 propose. Much more, capability or multiple “feasibilities” create knowledge paths, processes and mechanisms - thus new (design) practices proposed - that help iterate whether solutions can tackle the needs, through a trial-and-learn approach and inquiry into evidence (as R4 and R5 imply, and case III practice suggests).

4.5. Conclusion main case

The conducted design practice (case III) served investigation of objective 3 of this doctoral thesis. It was destined to *reveal the practice of design in international policy* and *design practice’s contribution to public value generation from policy in the international context.* Case III reveals that in the international governance context, design practice supports public

value generation from policymaking by laying realities and value associations open that remain otherwise non-, under-, or misrepresented and hence unproductive in the individual perception and decision-making of any given actor or counterpart (who takes part in formulating policy or implementing the given international policy decision). Design practice in international governance thus supports filling knowledge gaps at individual actor level that underlie decisions to be made in and upon policy and their implementation, public and private sector decision-makers alike. While the preliminary cases propose that design practice helps address knowledge and actor gaps at international governance level (see section 4.1.1 Relevance of design, or 4.2 Conclusion), case III unpacks in detail how actors are brought together to generate value, first around a given policy theme, from which then individual realities and associations are unpacked and synthesized.

At international policy level, design manages to fill knowledge gaps, by surfacing, addressing, and filling them based on broader and more heterogeneous grounds. This is given the horizontally and vertically wide array of actor bases and contexts, and (with the former) realities and value associations present (see beginning of section 4.4.3. on policy`s key strategic value proposition and section 4.4.2 on international governance). At actor level, instead of a right or mandate to take initiative for addressing a policy knowledge gap and its formulation, design practice enables and empowers to take initiative on behalf of society for and/or be involved in the policy *formulation* (i.e. policy content creation) stage (compare Design Practice Principle I: Departing actor coalition, and section 4.4.2, international governance specificities of design). Support from design practice in collective sense-making of a particular societal reality - thus overcoming actor-bound perceptions of a given policy and the perceived role thereunder - is particularly relevant in international governance:

Firstly, the actor base that makes decisions about a particular societal reality is particularly broad *horizontally*. This bears the potential for but also difficulty in summoning heterogeneous views under joint decision-making, notably if they come in vertically (compare Pathway 1, Creating opportunity for relevant and novel encounters to forge inclusion). Secondly, the decision-making in international governance is *vertically* far removed from content creation that underlies decision-making, i.e., the needs and realities of the policy end recipient. This has made grounding of policy in the end user needs less evident and perhaps not a by default mastered practice in international governance (compare R3 in the political realm, focusing on unity and majority at horizontal level; or R5: enriching a policy proposal by real-world insights).

Revealing design practice in policy making in international governance through case III finds that there is **no *one* practice of or approach to design in international policy**. First, while

the public (strategic) value from policy is expressed as the act of creating balance and equilibrium in society, particularly grounded in underrepresented views (see beginning of section 4.4.3 on policy`s key strategic value proposition), public value from policy is not something finite or fixed in the long run, and hence also not the value support from design practice thereunder: The actors and their realities are under constant flux, and hence are the 'equilibria' of knowledge and decision-making upon the former; again more so at international governance scale (given the higher reach, complexities, and topicalities of heterogeneous views and themes discussed). Secondly, design practice's adoption depends on the policy managers who deploy it as an instrument or mechanism in their given professional context and role they contribute with to policy, which is what are called "public value creation rationales" and identified as arising from the "policy practitioner personas"; see section 4.4.4 on public value creation.

Case III lets however, if not a single practice, extract **6 principles for design practice** (section 4.4.1):

Principle I: Departing actor coalition. An initial coalition is formed, composed of those willing to discuss a policy issue and those affected by it. Openness initially and throughout in approaching the issue is required. Five key features to establishing the actor-knowledge coalition (see Table 16) are found. The latter must: (1) address a new and at least complementary, well-defined policy theme or topic; (2) be aligned with issues of importance for the institutions that join the coalition; (3) ensure openness by all coalition members to a different way of making and producing knowledge; (4) pool resources in a pragmatic way and consider various interests; (5) provide a convincing appearance about the project to attract relevant voices.

Principle II: Contextualization and inclusion for productive encounters. Contextualized and inclusive encounters are enabled that bring forward productive exchanges and genuine inquiry through fresh opinions and knowledge (from the participants). The findings suggest various departure points into or "**styles**" behind how design practice assembles relations, thus stakeholders, that can qualify as productive in the international policy context: Namely **functional** in the political context, **instructive** for the policy maker, **inclusive** in participation by society, and **(re-)generative** for the decision-making on society and its path forward.

Principle III: Precision and consistency in initial intent and its orientation. A concrete starting point is set and commitment to this initial intent and the problem to solve for is secured. This starting point enables to set focus on and around *"a very specific issue"*, to *"not boil the*

ocean"; the former also serves so that a *"concrete outcome"* can be secured (e.g., IV4, or line manager (own notes)). The initial focus enables to start based on a given departure point (IV6) or a first example (IV8), so that assessment of the former or testing (IV8) can be more readily undertaken. Also, a concrete starting point enables a change or adaptation of the focus or process be made (e.g., IV5). The former is particularly important as soon as policy hits practice or real-world context (for iteration).

Principle IV: Success moments and awareness-raising for <u>each</u> actor involved. Productive, end-goal oriented moments for <u>all</u> involved need to be built in, for awareness raising and ongoing practical learnings and success. This is a process of ambiguating of policy content creation or the policy discovery phase (IV4). Through design practice, the integration of new knowledge happens *both* for policy makers *and* product builders; the latter feel equally "empowered" through the knowledge they obtain (IV5). Case III speaks to the importance of such success moments to happen throughout a policy development process, not just at the beginning or the end; and that empowerment and enrichment of the respective practice need be reciprocal, and not just unilaterally serving policymaking (but not product building, for instance).

Principle V: Active preservation of integrity of all involved roles, visions, and attitudes. Design practice preserves and protects integrity of all involved partners, their visions, expressed opinions, and attitudes, and works with and caters to the latter. Integrity and its protection throughout the design-led policy practice process manifest themselves at different levels: with regards to the *problem* (those designed for), the *process* - and thus the extraction of value associations, its management, or orchestration, the *final product* or solution, and the *actors* (partners and participants) and their tasks themselves. Providing and preserving integrity means to: (1) *solve for reduction of a manifest, given vulnerability* (of the affected, i.e., those the policy solution is destined to serve). This includes meeting those to serve for in their context, i.e. in their reality; (2) *ensure a culture of boundaryless expression*: no punishment or repression or value judgment on opinions or value associations; (3) *uphold and integrate a variety of opinions*: the latter enables, consequently, the extraction of a series of value associations that themselves enable robustness (thus a valid picture or frame policy needs to tackle); (4) *enable clarity about goals and missions, and capacities* (capabilities) and legitimacies, of each actor, at organization and individual agent level; (5) *ascribe all actors a clean slate,* which ensures the conditions of each partner and participant are explored and a culture of beginner's mind and good intention is installed.

Principle VI: Intermediary that builds outputs from actors and their interrelations. An intermediary that manages and "buffers" relations, to turn them into productive outcomes, is required. The intermediary actor serves to uphold the principles the involved parties (in the initial coalition) subscribe to (e.g., principle V). In the form of a *"high level buffer"* (IV7) or *"custodian"* (IV2), the intermediary preserves a wide set of mindsets and value associations in the design process. It oversees *"neutralizing"* the participating parties' value associations or *"interests"* (as IV2 called it). The role of the intermediary is also understood as being in charge of *"containing"* the project (IV7). As such, the intermediary has an impartial - with regards to viewpoints (public value identified) and outcome (public value created) - but not neutral role in a design process.

Additionally, design practice's contribution to value generation manifests itself at two main levels: at *public value identification* and *public value creation*.

Public value identification (see 4.4.3): Design practice supports public value from international policy by putting actors - those building and those using policy - into new kinds of relations and carefully devised exchange, as the six extracted design practice principles reveal. Design practice thus helps to constantly strive to overcome bounded knowledge or rationality at individual actor level (including the designer's own). Design practice hence challenges and reduces assumptions ("closes the gap") by **3 main pathways**: (1) Creating **opportunity for relevant and novel encounters** that heighten inclusion and surface new feedback and thus information; (2) Providing decision makers of any domain/sector with **new and deeper situational awareness and understanding**; (3) Increasing decision maker capability to **take agency for societal balance** (i.e. public value from policy) through their own respective decision-making cycles and practices. Design practice makes public value identifiable and relatable to in a new manner for each actor involved.

Public value creation (see 4.4.4): Design creates for actors and their contexts as much as through them and their perspectives. Individual actor realities and value associations are turned into public value based on different logics, **depending on the policy practitioner who deploys the given design practice in her given context** (recall Figure 18). Different "policy maker or practitioner personas" ("rationales" in section 4.4.4) seem hence to exist in the adoption of design at intl. policy level, and public value creation seems to depend on the context of those who make policy.

Design's potential to support public value creation from policymaking in the international realm arises across these public managers' or policy professionals' contexts. It comes in different ways, depending on the actor context in which it is deployed, namely by: augmenting practical ability for implementation and impact from policy (R1); focusing on people and needs policy builds for (R2); enhancing alignment and unity around a particular vision ("support compromise and majority") (R3); suggesting meaningful policies that simultaneously secure legitimization of a theme early (whereas the latter legitimization can lead or not to political approval) (R4); and - across those contexts R1-4 - by enriching a policy proposal by real-world circumstances from the get-go and throughout (thus collapsing the abstract policy idea or proposal with real-world implementation, thus context) (R5).

5. Discussion

This discussion chapter summarizes and discusses the emerging new knowledge from the underlying study. It is logically structured into, first, the revealed design practice in policy making, then, its value support for policy making, and implications for international policymaking. It addresses design practice's establishment of actor relations and knowledge contribution therefrom. It also discusses the value for policymaking from the design practices observed and conducted (empirical objectives 2 and 3). It subsumes the overall insights and links them back to the main research question posed, and subsequently draws implications for the meaning of this study in the context of policy making in international governance. The chapter concludes with the study limitations.

5.1. Design practice and public value generation support

The research into the three cases of design practice in international governance reveals that design practice does *not* serve public value at the implementation stage of policy (in the policy cycle model) only. Design does not help making public services more implementable or 'beautifying' or *"styling"* (Whicher 2017) them at or after decision-making stage, for a final or ideal value end state to achieve. On the contrary, **public value emerges *ongoingly* from design practice**, not at the end stage of a policy proposal. This contrasts existing knowledge

in the field, proposing inventories or end states of public value which to optimize for, or the so-called 'institutional' perspective of public value proposed by Bozeman (2002) or Jørgensen and Bozeman (2007, 2002) as presented in detail in the literature review (section 2). Deploying design in policy to create public value means to follow an evolutionary path: This means that public value generation is constituted by value identification and value creation alike (see Figure 19 below). Designing public value is an entirely generative task that starts by capturing individual value associations and assembling them as the design process into policy-making - thus design process into actor and/or knowledge gaps - unfolds. This can be compared to the generative view of public value that, e.g., Stoker (2006) or Moore (1995) propose. Value from design practice is evolving on an ongoing basis at the individual actor`s level, being the smallest unit to contribute to a policy theme. This finding confirms Bryson's idea that, in the international governance realm, various actors are coming together with their respective public value triangles, thus their public value imaginations, their mechanisms, and processes (Bryson, Crosby, and Bloomberg 2015). What this research sheds a light on more specifically is that and how individual value (IV) feeds into collective value (CV), from which public value (PV) can arise thanks to deploying design; see Figure 19 below.

Also, design-led practice in international governance serves to continuously uncover and equip for **a more holistic and authentic picture of a given reality in society**, extracting public value through continuous interaction. This builds upon what Polati Trippe (2019) finds in her analysis, namely that rather than a linear process, design in policy instruments are systems and these instruments are *"experienced as a continuum of interactions"* rather than *"punctual, fixed, transactional interventions"* (239). What this study finds, in addition to that, is that also in policy at international level, similar to what Sanders and Stappers (2008) propose generally for design as an instrument, design is active and operates at the front-end, i.e., when policy themes are entirely ambiguous and yet to extract from individual needs associations and to make sense of and unpack through a collective. - Recall the initial intent framing or initial coalition, designing around a first policy theme framing or designing into a knowledge gap. - Benington (2009, 232) underlined: Public value (PV) *"depends upon processes of co-creation with citizens and users at the front-line"*, relying on *"a deliberative process within which competing interests and perspectives can be debated.*" Just as Benington (ibid) and Bryson, Crosby, and Bloomberg (2015) this study argues that all actors bring in their respective and proprietary values or even value triangle. An organization's representative or the given "public manager", as Moore (1995) calls them, vouches for their value association, their imagination of what is legitimate, and for what they can contribute

capability-wise (e.g. Principle I, 4.4.1). We must acknowledge that the smallest unit behind the decisions that are made for society - be they at international or lower governance level - corresponds to a person or representative, thus an individual actor herself or, at least, a collective of the former. Cases I and II show how workshops and prototyping - or the combination of the former (in the participatory design practice case III) - contribute to extracting value associations from actors. The latter range from policy makers, to partnering organizations that have a stake in the given policy theme, to the affected or "policy (end) users" - such as participating companies in case III, including the designer herself as the reporting or synthesizing intermediary.

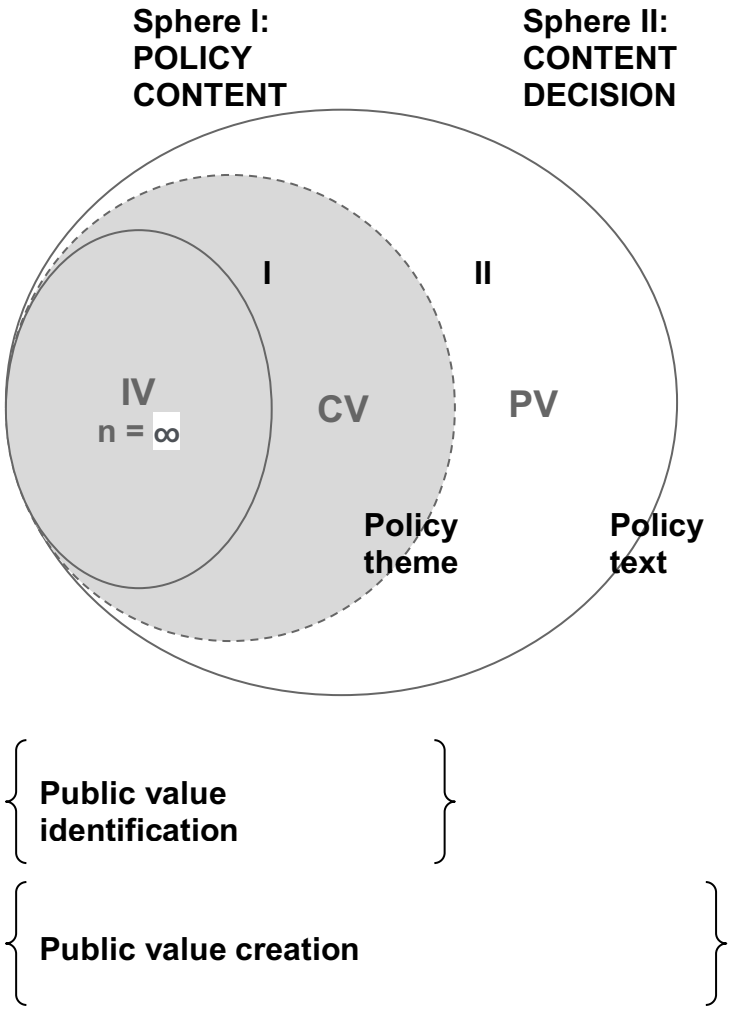


Figure 19: Overview of generating public value in policymaking at international governance level: Visualization of spheres I and II, policy content-co-creation or individual value extraction with relation to the given theme (value identification); and decision-making for the final policy proposal based on that very content (value creation)

Furthermore, we must acknowledge that policy is based on relationship-building and on, as already previously alluded to, actors - with their respective and particular viewpoints - as the smallest unit of knowledge capturing. Meynhardt (2015) suggests that, at least for public value creation, different actors come together and interact 'in some way'; collaborative and participatory governance literature propose that state actors interact with non-state actors (Emerson and Nabatchi 2015; Ansell and Gash 2008), and that creating public value happens through the involvement of an array of actors from various industries, seeking to engage in collaborative decision-making, policy design, and policy implementation (Lahat, Sher-Hadar, and Galnoor 2020). In line with scholars illustrated in literature section 2.3 - it is uncontested that, in networked, interrelated worlds, value can be achieved best through collaborative and multi-actor-creatory approaches, thus that the governance of public value need be collaborative and shared (need be "participatory"). These literature streams, however, do not point to the importance of managing the relational aspect, which is what this study of design in public value generation underlines.

Design points to the fact that we must put **heightened attention, again, on whom to include, when we do so, and how**: Design groups actors behind relations and manages interactions that moderate those relations. Design thus 'orchestrates': When it manages, it enables establishing channels that help share information that is relevant, upon which the involved agents are again enabled to take action, e.g., to reflect or implement in their own spheres (as illustrated in Pathway 3, section 4.4.3). Once the former is taking place, another set of value associations on the former can be brought in through the design process and the relational interchange established through channels set up by the design process. Relatively recent literature discusses such "relational design", as this study suggests to call it, albeit from a different rationale and perspective: Maier and Fadel (2009) propose a *"relational theory for design"* to enhance the *"scope of design"* and its *"explanatory power"* (13). That relational theory the authors propose is based on combining developments from various subject areas (mathematics, physics, computer science, or philosophy). What they do suggest, too, is that such a view does not radically alter design but amplify its thinking and its functional focus. Cipolla and Manzini (2008), as referred to already in the literature section (section 2), discuss the importance of relations in design, albeit from a social innovation and service design viewpoint. They define relational services as services that require *"intensive interpersonal relations to operate"*, interrogating how design can foment the former. Similar to this study's findings of design in policy, they assess that design enables encounters and relationship-building. What stands out in the findings here, however, is that in order to make policy with

public value, and to provide meaningful policy, the relations established and managed in the process of policymaking need be carefully weighed, established, and managed; and that the currency of what makes or breaks good, valuable policy is a function of the actors involved and orchestrated in the process. That is, valuable policy in international governance depends on the degree of inclusion into the policy-making process, ranging from defining whom the policy is built for to who is integrated into the policy creation phase. This has been revealed thanks to deploying design approaches in the international governance domain across three case studies.

In this context, there remains the question of what is a valuable, meaningful outcome from design in policy, or what is a valuable, meaningful policy design. As previously referred to, the **valuable outcome is highly defined by the actors involved themselves: those for whom the policy is built for and those integrated into the policy creation phase themselves.** The policy design is thus as meaningful as the connections are deep and lasting with the respective audience (the actors) involved, which means that the kind of design process deployed is of utmost importance as well. The former shapes the value extraction potential and hence ultimate design. Jørgensen and Bozeman's (2007) eight nodal values seem to hint well (see Table 1, literature review section 2) to the kind of connection that needs to be fomented with stakeholders. They comprise *human dignity, sustainability, citizen involvement, openness, secrecy, compromise, integrity*, and *robustness*. All eight nodal values are reflected in the design principles that are derived from the three cases: E.g. a *departing actor coalition (principle I)* that caters to the nodal value 'citizen involvement', for instance. *Principle II, contextualized, inclusive encounters,* that become productive thanks to 'openness' and 'human dignity'. *Principles III and V (consistency in initial intent and active preservation of integrity)* allow for integration of 'compromise' and 'integrity'. *Principle IV, success moments for each actor,* speaks to 'sustainability' (of the given engagement process); and *principle VI*, *the intermediary*, guarantees 'robustness'.

The same nodal values were also found in the case III design: E.g., one major outcome of case III[103] was that most of the participating companies needed to first be able to pursue non-biased and fair AI products before they could actually pursue explainability or transparency therein. While explainability or transparency were the ultimate, ideal outcome for the case III policy, expectations had to be adjusted. There was **a difference between the initially**

[103] *Remember that, for case III, a non-disclosure agreement is in place. The project's outcomes can hence only be described in illustrative and general terms.*

defined as ideal and ultimately actual impact from the design-led program, **mediated by preservation of integrity and secrecy**: The design process respected the state in which the participating actors found themselves in while it enabled, simultaneously, the same participating actors (the affected policy users) to share their actual needs and vulnerabilities (that is, requiring the participating companies to implement transparency or explain a biased or unfair AI system would not have preserved the integrity and needs of the participating companies themselves). The design process thus held inherent the values, e.g., *openness*, *citizen involvement*, *secrecy*, *robustness*, and *compromise*. It is thus fair to say that the value of the design outcome (in the co-creation stage or sphere I) corresponds to the values that are inherent in the design practice. The nodal values provide at least a hint of what those values are, together with the design practice's principles introduced in section 4.4.1.

Further results by - or impact - from the project pointed to the fact that all the participating companies could not have implemented the policy prototype without guidance and dedicated technical support. There seems to be a lack of concreteness and practical implementability in how policy is generally made or offered to policy users (Halse 2016 would call this 'tangibility'.). The former made it hard for participating companies to extract productive knowledge from policy for themselves (i.e. on their own) in the first place, let alone implement the very knowledge conferred from policy in practice (without the additional practical help by, e.g., AI experts and a toolkit). Additionally, as regards the protection or promotion of ethical values from AI or human rights, very little knowledge on the former policy themes was available in the given region B and its jurisdiction. Most of the participating companies in the design-led process and pertaining to region B jurisdiction had heard about the transparency issues in AI and the importance for ethical implementation of AI. They all, however, had no ethical AI practices in place or knew about good practices in the domain. These main project outcomes suggest the importance of awareness-raising and triggering some kind of longing for producing new knowledge - thus finding momentum to enable productive knowledge exchange: The value and the upside of the particular activity - the design-led policy activity in this case and of a given policy itself - needs to be made available to the companies and their users (see 4.4.1 Principle I). In addition, it is remarkable how the ability to make "connection" and establish a "relation" with AI and human rights and ethics surfaced as a clear lack in the existing status of knowledge amongst participating companies. This constituted a given knowledge gap for the participating companies, thus the individual actor, with the policy theme under concern: One would have expected this to be a topic covered by the companies' internal user research. This, however, was not the case. The design-led

approach managed to complement the knowledge and viewpoints of the participating companies, and to raise awareness for the importance of a given policy theme (in AI) - and thus a particular ethical or societal direction.

Figure 20 shows how such change of individual (aka participating companies') viewpoints or values (IV) manifests itself, and how a collective actual (CV) and/or collective ideal consensus (PV, i.e. public value) is achieved. Building upon Figure 10 one sees, once more, that value has a direction and magnitude. Recall Mazzucato (2018) who speaks about mission-oriented innovation or

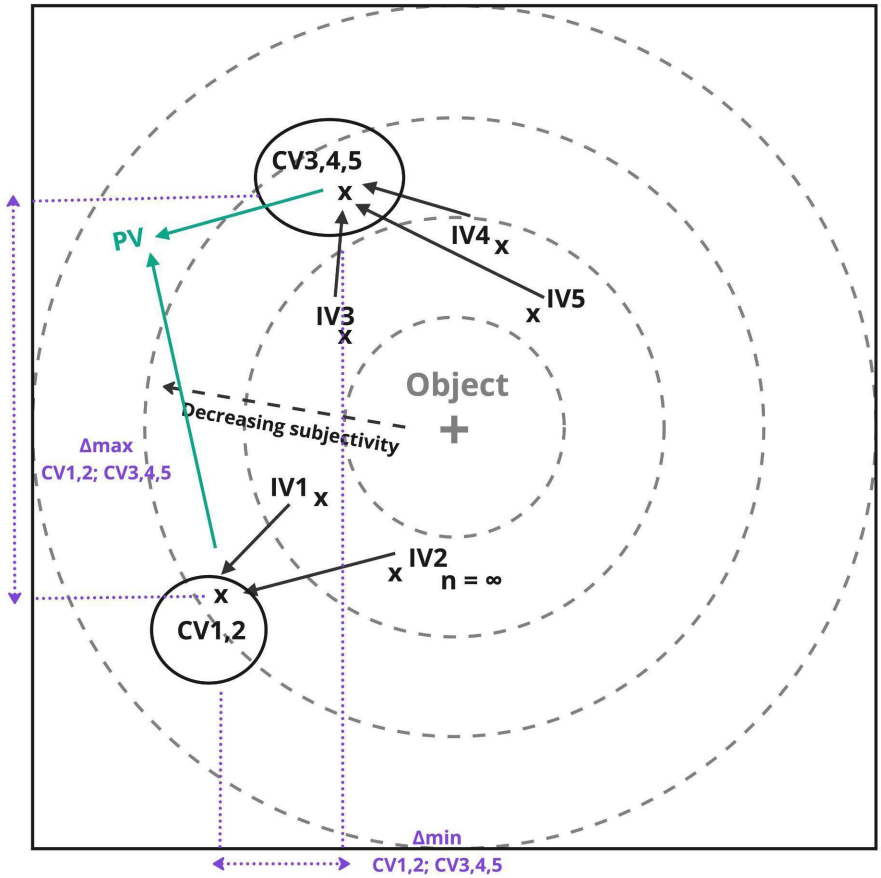


Figure 20: Achieving collective consensus - an illustration

economies that present *"direction-setting policies"* and *"proactive" approaches to policy* (see section 1.1). The value or viewpoints of individuals (IV) 1 and 2 lead to collective value (CV) 1 and 2; IV 3, 4, and 5 lead to their respective CV equilibrium. Take the first example referred to above: IV3, 4, and 5 are those companies who needed to pursue fairness and unbiased AI

systems (= CV3,4,5) before they could arrive at the ideal public value (PV) of transparent and explainable ones. Furthermore, If companies were able to relate to policy and/or ethical AI practices better through a more tangible policy (compare to second and third outcome presented in the previous paragraph), they would be able to integrate the former and move away and further out from their individual subjectivity to a collective value equilibrium, e.g., CV1,2, to move a step closer to an ideal PV equilibrium. Thirdly and lastly, what is important to be mentioned is that the ideal PV equilibrium is not necessarily always far away from actual CV equilibria: take again example one, in which CV3,4,5 are the participating companies who agreed they needed fairness prior to transparency, and CV1,2 stands for the companies who can pursue transparency directly. The ground truth for a policy or PV equilibrium lies at a point that comprises both CV1,2 and CV3,4,5; that is, a policy that includes provisions for AI fairness and unbiased AI systems *and* their transparent use (as discussed just above) and thus caters to various stages that users of the policy find themselves in. Different CV equilibria need not always be far away from each other: Design needs to navigate the distance of combining and comprising both, by prioritizing Δmin over Δmax, for instance.

Ultimately, the **design process in policy-making is a set of touchpoints of moderative interaction with a needs-grounded and service-oriented view**: This investigation found that design practice or a designing practitioner in policy context is a mediator of viewpoints or (in knowledge gap terms) value associations, including as they unfold and alter in the process, constantly linking the interactions and focus of the former back to the most affected or initial theme to design around. Zahedi (2008), from design studies in human-computer interaction, finds that the designer is, essentially, a mediator, acting as a *"group facilitator"* (345) and influencing the practice. The interaction channels – or practice - deployed by design in policy can take on shapes that are novel or creative: like, e.g., mobile ethnography, but at the same time be conventional, such as emails, video calls, or meetings, or sociologically based, such as focus groups. Pivotal therein is that design practice offers a well-designed, structured, transparent process and practice to enable and moderate these interactions. The actor-interaction process clarifies both roles in and expectations from the policy theme: namely the activities or follow-ups awaited from each role or actor to be brought forward in their own decision-making sphere or into the given designing coalition or coalition plus (e.g., into their product decision-making sphere or when actors are included gradually throughout the process beyond the initial coalition, including the policy end user or recipient, or most affected; compare IV7). We know from earlier research that service design practices can

“enable” such relational - or actor interaction - dynamic, given design can build and manage *“interpersonal encounters between participants.”* (Cipolla and Manzini 2008, 50).

Furthermore, design in policy scholars see in design an instrument that helps present complex issues, such as policy, in a more understandable, thus a more tangible, way (Halse 2016). **Making problems experientially available to stakeholders, thus making policy issues and their building blocks accessible and “empathizable”**, would allow for higher quality conversations of problems and solutions. Seo (2022) proposes that in design, "intangible" refers to features of a product or service that are not easily quantifiable or measurable. Intangibility in design highlights the importance of considering not only the physical attributes of a product but also those elements that are less easy to be captured or subjective but contribute to a design’s overall success. These could include subjective qualities such as user experience, emotional impact, or the overall feeling that a design evokes. As Meynhardt (2015) suggests, for creating value, we may need to address the subjective and the “hedonic-aesthetic” or what the researcher termed “the human element” (see literature review section 2.1.2), namely by understanding and incorporating aspects like user experience, cultural context, or emotional resonance into the making of policy. A designer is, in fact, in the role of considering diverse user needs and desires (Zahedi 2008). Such a holistic approach helps ensure that the final design goes beyond what are obviously tangible features and concretizes equally the intangible aspects that can greatly influence user satisfaction and success of the designed artifact. This issue of tangibility and intangibility is indeed central in the context of design in policy: By making policy as the intangible tangible and hence more understandable and accessible - which is what design brings to policy projects - individual value (IV) is altered, augmented, and changed through empowerment and inclusion of the particular actor or individual (i.e., participant company). This again enables a change of value associations and perception of a topic (compare previous paragraph).

Policy is currently lacking bilateral clarification of roles and actions to take: Recall that value is not the end state - which per se requires a mindset shift in how policy-making is approached and thought of - but emerges through interaction of actors put together in a tangibility-enhancing process around a given theme. **Bidirectionality** (compare Principle IV, 4.4.1) **enables actors to partake in a policy-making effort from *their* point of view and context - thus to obtain clarity, express, and externalize their value perceptions** - while at the same time expanding this same actors’ own rationales and actions enriched by the

others. Albeit not policy-related, a paper on ventures assessed that the design of accelerators, for instance, has an impact on entrepreneurs and their bounded rationality. The paper shows that entrepreneurs benefit from the search of additional amounts of information given they tend to close decisions prematurely (Cohen, Bingham, and Hallen 2019). - Public value from policy is thus made visible implicitly and incorporated into action *as policy is made. The former enables empowerment and agency at individual actor level to transpose public value.* Empowerment and agency for public value get heightened through a design process, an element that seems to be absent in traditional and unidirectional policy input collection, such as consultations. The former element of going beyond bounded rationality also resurfaces that prototyping approaches and iterations should be made a go-to approach in policy: Already Moore (1995) assessed that the dilemma in policy remains that policy is typically not implemented by those who build it. Design can be a tool that helps navigate this maker-implementer abyss, provided actor interactions are carefully designed and actors' roles - and thus their integrities - are cherished, preserved, and used.

Related to the former, this research equally postulates that integration of the least advantaged or most affected in the policy-making process should be the norm: **The "policy (end) user", as the researcher calls it - or "(end) recipient of policy" - play(s) a vital role in the design process in policy**, albeit underestimated in policymaking to date. While no references in policy or design literature point to the existence of a policy end user or policy end recipient, business-related entrepreneurship or open innovation concepts discuss democratizing and open innovation and have made sense of the so-called *"lead user"* already approximately two decades ago (Von Hippel 2006). Those concepts also look into how ordinary users (ahead of their market and predicting market trends) can innovate themselves in the product design process or are enabled to innovate entirely (the design of) a given product. Users can thus invest their own creativity in a given process of product-making, which is becoming an increasingly important market (Franke and Schreier 2010). There should be a parallel established with policy insofar as policy might want to empower individuals to learn to build their respective products or services 'better' or more society-centrically, with the help of policy. - This is what case III postulates by letting technology companies learn for their service- or product-building as they obtain the chance to understand - thus better relate to and identify with - policy proposals throughout the process of building. The former would not necessarily mean that users end up designing a proper policy, meaning a policy that is personalized to themselves only, without establishing some validity at scale (The underlying data emphasizes that elements like e.g., enforcement, should

not be part of a participatory policy design process.). - It must be added here that grounding a policy in harm, by including and understanding from the most affected, does not exclude validity of policy at scale, meaning that it is inclusive of a variety of actors (and viewpoints) and widely applicable (e.g., across an industry): We have heard, the core strategic value proposition of policy is to balance and equilibrate society, while prioritizing the needs of the most affected or disadvantaged. Evidence that such an approach could work can be found in extreme events policy: The single most important criterion for which disaster policy optimizes is reduction of vulnerability (Sarewitz and Pielke 2001). To create and use knowledge, disaster policy must be "*societally valuable"* and "*vulnerability-reducing"* (406), even though it is grounded in local circumstances.

Specifically, the international realm stands to gain from such kind of "extreme user thinking" and integration: the end user, in this case, can be an entire disadvantaged global *region*, as C3IV8 underlines with the geographic division she covers in her EU policy work; or *a particular country* from which to extrapolate, as C2IV2 or C2IV7 suggest by including a particular African country around which they prototype global aviation standards. Or, the case III design project highlights *a particular industry*, namely the tech industry, acknowledging them as the users of a policy and at the same time implementers of policy-led, responsible practices of product- and service-building in automated decision-making. Location-specific policymaking is debated in policy literature as so-called 'place-based' policy. Place-based policy denotes public policy that is made and operationalized with a focus on the characteristics, needs, and opportunities of a particular geographic area or community. Rather than adopting a one-size-fits-all approach, place-based policies recognize the unique challenges and assets of different regions and seek to address them in a targeted manner, explain scholars (Barca, McCann, and Rodríguez-Pose 2012; Beer et al. 2020). Place-based policymaking recognizes that the given context of the geographic area under concern can lead to (city, region, rural area) economic and societal wellbeing. It is hence an approach that pledges to tailor to needs (Beer et al. 2020, 12) and it has gained traction since 2010, scholars report (Beer et al. 2020). Reacting to challenges at global policy level, regional approaches can serve needs while serving as role models for regions and further international adaptation elsewhere.

Whatever the level the user is pinned down at - regional, citizen, national - policymaking stands to gain from thinking in "user" terms. **Considering the user first** unfolds as a core value-add of design's application to policymaking at international level. As assessed in this research, design practice supports policymaking in focusing on the ones policy is designed

for and with, at vertical and horizontal level. Thereby, design's value-add for policy is five-fold: First, design *augments practical ability for implementation and impact from policy*. Second, design *puts people and needs policy builds for center-stage*. Third, it *enhances alignment and unity around a particular policy vision*. Fourth, it *proposes meaningful policies that simultaneously secure legitimization - and thus a knowledge gap to design into - early*, and fifth, it *enriches a policy proposal by real-world circumstances* from the get-go and throughout, given it collapses an abstract policy idea or proposal with real-world implementation (see public value creation, section 4.4.4). In all the former, including the perspective of the actors to build for - thus of the end user - gets vital, as it builds the basis for the collective *with* which policy gets made, i.e., the horizontal governance and political decision-makers, and *through* which its practical impact gets facilitated and implemented, notably corporates (in case III) or national-level jurisdictions (case I or II). In this context, design – by including actors – can help address the bounded rationality problem in policy-making (Jones 1999), that is, that policymakers suffer from cognitive limitations in addressing policy issues, or that they have to navigate contested problems in policy (Zahariadis 2016).

How to choose the users to build *for and with* - and also *through* - remains a central question, given the actors and their inclusion underlie the policy theme to be tackled, thus the knowledge gap, and its closure. As heard substantially throughout the findings (sections 4.1.1 and 4.4.4) and confirmed by the knowledge gap (section 2.6), **the chosen stakeholders, and their particular value associations define the knowledge-gathering (and thus knowledge gap closure) process**. This is true not just in terms of the content of collective value that will be defined or produced (*for*), based on the individual actor associations, but also in terms of legitimizing the content proposal at a later stage (*with*) and the capability of implementing a legitimized proposal (*through*). - Recall the sharp feedback by the long-standing politician (C3IV1), stating that a majority serves not much to nothing if it is not able to move to let actions follow. – Voorberg, Bekkers, and Tummers (2015) investigated the intrinsic factors that motivate citizens to participate in co-creative endeavors in policy. They assessed that citizen participation is dependent on four main factors, namely *intrinsic values or civic duty*, thus the desire to improve government services; *a feeling of ownership or being part* of creating well-being and having responsibility thereover; the presence of *social capital*, i.e., activating and fulfilling the promises of collective action; *trust* in the co-creation initiative. This study's findings, looking from a design stance into what is valuable policymaking, are consistent with the aforementioned scholars' work. While additional research into policy (end) usership and their different categories will be required to understand further the value that

design offers to policymaking as they are included, the underlying investigation provides at least first input, revealing that policy users - i.e. actors - need to be grouped and assembled in: a *functional* manner, thus be considering the political context and legitimizing (mandated) actors; in an *instructive* way, thus providing rich and valuable insight for a policy decision-maker; in an *inclusive* fashion, thus securing versatile and a society-reflective integration of stakeholders, and in a *(re-)generative* way to support the long-term, visionary decision-making on society and its path forward. With the results of this study of design processes in policy making one can complement self-motivational factors with objective, replicative elements that help enable stakeholder inclusion from within the policy context.

The dilemma of stakeholder selection and choice of audience that policy is built for is not just one at departure point but one of ongoing and dynamic inclusion of viewpoints (hence actors) in the content creation and decision-making processes of policy. Diversification of viewpoints and the more conscious choice of stakeholders, and how they and hence their viewpoints are mixed, constitute the value of a policy proposal. Enabling such a more encompassing, outside policy audience choice in the current policy making system requires to acknowledge it as not just a *who-to* but also a *how-to* consideration right at inception of a policy proposal. - The former merits more than just an excuse of co-creation being difficult or cumbersome or excessively time-consuming. - Literature summarizes that participatory sessions in policy are structured, notably by design thinking, into directed steps and stages (Whicher 2023, Jones 2018). A dedicated professional competence and practice to summon stakeholders and run policy user research and integration might be required in policy, notably given society becoming ever more heterogeneous and complex. Design practice reveals itself as such a valid who-and-how-to practice in the underlying investigation, at least proposing an entrance point thereto. Case III project practice confirms that an “engagement” or “community manager” role, leading a design project with regards to all participants, might be indispensable: The individuals engaged and taking part in the process of design define the essence to the underlying public value that is being created, ongoingly and in the final content proposal provided. This piece results as central and indispensable to any design practice in policy, once one acknowledges that the currency of policy are actors with their viewpoints and how they are put into relation or interaction. Identifying public value starts by identifying the appropriate actors, yes, but also their ongoing enlargement and how they engage and interact amongst each other, in alignment with what the given policy (design) effort is destined to build for (initial intent).

Additionally, and contrary to how it might be represented mostly through innovation paradigms or innovation and change notions spilling over from industry into policymaking, **design does not equal a total reshuffling** of a state of play in policy, alter entire roles or tasks behind policymaking, or require a radical change or groundbreaking mindset shift. Design practice in policy, instead, aims at being impactful by preserving and reminding of reinforcing roles and responsibilities of the actors already present, contributing to and operating in the international policy- and thus society-making arena. Junginger (2015) explored organizational legacies as practices taken on from previous generations, handed down from employee to employee, regardless of seniority and their design legacies. As design practices already instilled in organizational life, she describes how design stands to profit from appreciating existing organizational infrastructure, rather than presenting a radical design agenda. Instead, design needs to find a way to connect its work with the design activities already unfolding and present in the organization. What Junginger proposes in her theoretical paper, this study can confirm through practice: design is not radical yet integrates itself by building upon the existing practices and mechanisms in the organization, notably on the existing roles. Good and functioning design practice in policy augments accountability, not only for the policy maker: Notably through providing tangible and identifiable policy references, it spreads accountability and responsibility across all the involved, public and e.g., corporate sector alike. It establishes a sense of empowerment and ownership for societal evolution in the given policy domain under concern and designed around. Contrary to what disruptive notions of innovation (Bower and Clayton 1995) may postulate, this research into design in policy at international governance level does not require a total redefinition of roles. Rather, it brings to the surface that existing roles should be leveraged, visions preserved, and mandates in decision-making be respected and fully leveraged. The data indicates that policymakers and politicians are, for instance, expected to be the ones to decide about the proposed content created, thus the proposed collective value proposal originating from the design practice under concern (originating from sphere I); they are expected to decide about the last step towards public value creation (sphere II). The intermediary in particular, and the departing coalition, are expected to establish the missing link between policy makers and policy recipients (Case III).

Overall, design identifies public value through its craft and for the final political policy decision, meaning during policy content that is being created and at the front end of policy design, when strategic decisions are made. Design is, however, not in charge of deciding what creates the public value in a final political (majority-seeking) decision-making stage and

at policy implementation in the policy cycle stage. Design, in the international policy context, prepares policy content and ensures that the policy content proposal is valuable, so that it can be decided upon by policy or political decision makers for a final policy proposal that is to be implemented. This is fundamentally different as to how scholars have discussed design and how design is viewed, namely as a *"refinement"* that is to be added at the implementation stage (Penin 2018, 10); Junginger (2016) highlights the heavy focus and limitation of design on policy implementation. This study finds, instead, that **design augments the robustness of a policy proposal and enhances the formulation stage** through both more holistically and broadly needs-based and needs-addressing solution proposals. It does not alter or intervene with the inner sphere to policy making: namely the majorities that are required to design a political 'yes' to adopt a policy the way it is suggested from the content obtained through a design practice approach. Instead, design reinforces and strengthens value extraction (hence value identification) that serves the creation of public value. It delivers policy content that is valuable in the first place. As depicted in and throughout this research, notably by Figure 13, in conclusion to already the preliminary cases I and II, there remains a black box between policy content creation and decision-making upon that content. Further research will be required to assess how best to make sense of designed policy content and what interactions are at play concretely when designed policy content is "handed over" to political decision-makers. This research points to the fact that, when deploying design in policy, the former remains an unresolved puzzle, a "black box" (see Figure 13). It is questionable whether design should at all be required to intervene with that political decision-making realm: Design, as this research proposes, is a societal-political instrument that confidently navigates various societal actors` needs in a given societal context, or a *"situation*", i.e., across encounters (Penin 2018, 10). **To what extent design practice should and would qualify as a proper party-political instrument is a valid question for future research to pose.** So far, design seems to indirectly shape political decision-makers' discretion, insofar as it proposes deep and relevant content for political decision-makers to work off of and for policy professionals to include in their proposals that underlie political and corporate (e.g., as case I and III suggest) and national-political decision-makers (e.g., as case II and III suggests).

Design practice in policy at international governance level results in **a "pitch for public value".** The pitch departs from a proposal for greater public value - i.e., a better balanced, a more equilibrated and just society - departing from a few initiating actors, a departing coalition. The latter sets out to validate a departure narrative in a both needs-based and

needs-addressing manner, to obtain a *meaningful* solution path that is grounded in a heterogenous pool of affected. Once the latter is made accountable and robust it is presentable to the political decision-makers (for legitimization). Design is subtle but at the same time powerful: by **leaving space for encounters that do not or would not happen otherwise, space for awareness-raising is provided to individuals.** The former will in turn change practices and perceptions of the individual actors and their value associations. This confirms the proposition made in the literature section, inspired by Simon (1969), that design is a way of addressing bounded rationalities (see section 2). Simon proposed that the human brain - as well as the computer and any artifact the human designs - has limits and is unable to achieve a finite goal in the context of wicked problems. Also, he postulates, neither the computer nor our brains are capable of grasping the complexities of their external environment. Building upon that, the underlying knowledge gap and all three cases in this study show that design allows to build a space *and* provides a mechanism in which a variety of individuals with their respective limited - bound - rationalities or value associations find each other and amalgamate. This study suggests, building upon Simon, that solving the grand policy challenges of our lifetime would otherwise, in the absence of externalizing individual connotations and expectations of different actors and orchestrating them into a joint policy proposal, remain a void endeavor.

Finally design practice in policy supports public value generation and identifies value from individual identities as much as it creates value through the recreation of those identities and the recreated value associations thereof, always in relation to the policy theme (initial intent). Public vale generation lies hence simultaneously in *identification and creation* that arises out of a tangible design process that does not create noise or unnecessary disruption but plugs seamlessly in the context of use (value identification) and usability (value creation) of an agent (actor) in society - corporate, policymaker, government official, or expert alike - and thereby serves heterogeneous necessities. The latter simultaneous and built-in identification and recreation of value associations is what happens both for participants and hosts of design practice. The latter reveals itself as part of what is called trial-and-learn, iteration or experimentation, validation of a departing hypothesis, or capturing and contextualizing in the real-world. The former concepts all invest in an individual actor`s mindset change, inspired by the departing coalition or the (co-)designing collective. - Note that this study avoids underlining the term “co-” when speaking about designing in international governance or in policymaking, for the latter realm is by definition a shared one and an effort that brings together a wide set of especially horizontal and, increasingly, vertical actors, notably when

aided by participatory or design practices. This research into governance and public value literature with their development over time finds that it is uncontested that valuable policy is policy that is made and created by the many. Collaborative and participatory governance, or most recent developments of public value creation and the various agents' triangles behind (see literature review, chapter 2), speak to the fact that **international policy making, today, is an affair that is to be made by the many.** What we might lack, as the findings reveal, is the focus on the how-to, i.e. the practice, of bringing the different actors together (see also section 5.2).

Design practice - in the international governance's policy making realm a practice centered in the most affected, enriched by the interaction with a given (policy) theme and the relations of multiple, pertinent stakeholders therewith - means to generate and regenerate an understanding of the policy solution space grounded in but not determined by what is valuable or needed by the society at hand: The collective value understanding obtained from design practice about *what to* solve - the identified necessities or challenges based on the given design practice and actors - does not determine *how to* solve for public value, i.e. determine the balance and equilibrium of society at scale. The latter remains a mere proposal by the design practice, legitimized - and hence paved the way for - by the responsible government delegates. Design is thus not deterministic but generative as a practice applied to policy making.

5.2. Design and the strategic value triangle

Design practice in policymaking in the international governance arena **puts emphasis on the practice – 'the how' - behind policymaking**: Public value emerges ongoingly from policy design practice and is evolving on a continuous basis at and from the given actor level (for details see previous section). This study's findings on design practice hence propose to include, in the public value triangle model, a fourth circle, namely a "practice" wing. This is to underline that it is the (design) practice we decide to deploy in policymaking that will help create public value or not (or less) in international policy (bold in Figure 21). This practice points to a component of activity-centered over purely human-centered design (Norman 2005) for design in policy: Activity-centered design means that valuable designs, i.e., *"successful"* ones (15), include the underlying activities that the design proposes. Those activities are made understandable to the people. Meaning the design is understood thanks

to its activities (e.g., a watch, garden tools). The value triangle postulates that the practice (the activities) of generating value from policymaking, operating between legitimacy, capability, and value, is something implicit, nearly subjective and belonging to the respective policy manager, as if it was up to the latter to navigate political viability, administrative capability, and societal needs spectra in their realms. This is, in policy, a heavy burden to shoulder and navigate for one actor. It could be regarded nearly as absurd or inappropriate considering the overall societal well-being and balance that policymaking is the vehicle for.

Arguably, public policy is made not just by public managers in the public realm but is a collective effort of policy and other (e.g., product development) delegates across industries. – After all, *"designers who can solve the most wicked problems do it through collaborative integrative thinking, using abductive logic, which means the logic of what might be."* (Dunne and Martin 2006, 513). - **All of the public managers in this study deploy design practice in policy differently and have a different understanding of creating public value from policy.** See the different policymaking personas or rationales (section 4.4.4). Design scholar and practitioner Norman (2005), however, discusses how we need *"a strong, authoritative designer"* who *"examines suggestions and evaluates them in terms of the requirements of the activity"* (17). Something as important and strategic as public value generation from policymaking should, however, neither remain implicit (as an activity) nor proprietary (subject to one policy maker's rationale) when it comes to the practice deployed. Also, design practice can support awareness for *how to* generate public value across different contexts that contribute to policy making in international governance, be they political, international organization, industry, or NGO, the latter all being equally relevant to policy making in international governance. Across all the different contexts, design can offer a particular value-add, as presented in the finding (compare again with the public value creation rationales 1-5, section 4.4.4). The underlying investigation into design suggests that policymaking needs to grow from a "who to" (include) into a "whom for" (solve) *and* "how to" consideration (Figure 22), thus needs to combine human- and activity-centeredness.

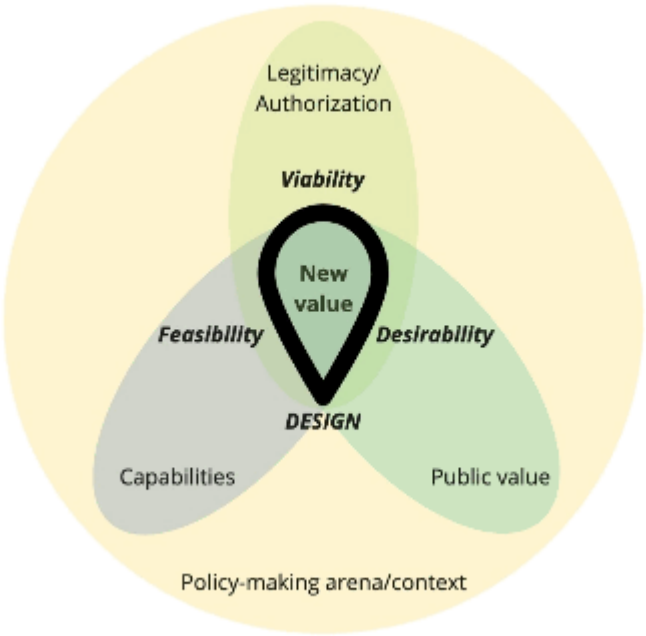


Figure 21: Public value strategic triangle enhanced by design practice - generating public value from policymaking

The deployed practice in the participatory design case III, paired with the public value interrogation, propose that finding out about the *what, the needs* to design for provides the response about *how* to solve for the need, thus the *capability* to solve the problem: Knowing what to solve is not equal to knowing *how* to solve for that what, given desirability (public value) is unequal to capabilities and know-how that are put to action in the name of desirability through the practice itself, be the latter workshops, prototyping, small-scale interventions, post-it based exchanges, etc. The deployed design practice in international governance is closest with the public value creation rationale 4 (see section 4.4.4): *Understand first who can lend commitment, credibility, and authority to a policy proposal (legitimacy); then determine who to build for (public value), which will reveal the challenge (policy problem) to work on. Finally, make sure to generate capacity, i.e., the know-how and the resources, that will show how to best solve it (capabilities).* Recall C3IV7`s quote*:*

"*If you don't understand the problem [...] that you're working on, then your capabilities are useless; if you don't understand the value that you're, you're building and for who, kind of like, identifying the stakeholders, then, what problem are you even talking about?! And if you, you've identified the stakeholders, you've identified the problem, and you've got the capabilities to do it, that's great, but if you don't have legitimacy, it's gonna be useless."*

The former is playing nicely into C3IV1 as cited earlier in this section, who postulates how unity is worthless if there is no action that follows upon, i.e., how legitimacy itself is not serving actual policy action. This proposes that **actual practice, thus actual implementation or iteration, must follow once credibility and thus legitimacy for the departing coalition or a given policy theme are defined:** Capacity and know-how, thus the actual method and thus 'how to' solve - that is, the design practice-led inquiry into the need - come in at the later stage. **Solving for a policy need is hence not equal to the (initially) assessed need or desirability itself** (examples: Case III change of program, C3IV3). The former suggests, in addition, that the practice of policy making remains *tentative* to cater to a policy need and is composed of (various) actors' capability/ies. That practice can remain iterative or finite.

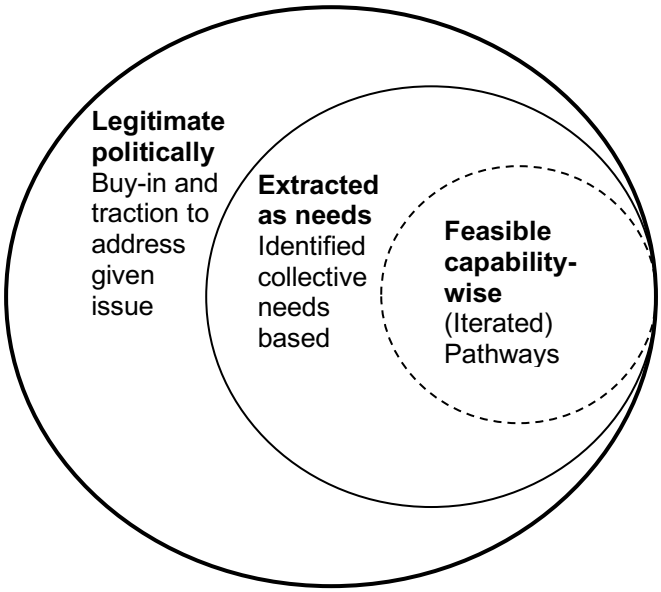


Figure 22: Who to, whom for, and how to solve - highlighting design practice's approach to value creation in international policy

Figures 21 and 20 again display the previously made point: The elements of the established design's desirability, viability, and feasibility Venn diagram can be transformed into value/needs, legitimacy, and capability, i.e., the three elements of the strategic value triangle. First, viability, thus legitimacy to create policy content plus securing a likelihood for consideration of the content, gets secured through the composition of the actors in the departing coalition. Second, an initial theme or point of view and thus need to solve for gets defined, i.e., desirability. In the third step, the former desirability gets addressed by exploring feasible routes and options, with each stakeholder and at each stakeholder end. The deployed design practice in policy at international governance level suggests that **finding societal (policy) solutions is not just an issue of identifying needs or securing**

legitimacy, but also of venturing out to propose solutions by pledging the required capabilities or resources. Cases I and II propose the same modus operandi.[104] This suggestion fits neatly into existing research in innovation policy, notably the one on mission-driven innovation that Mazzuccato (2018) proposes.

Tied to the former, it must be acknowledged that **valuable policy design will require resource commitment from various actors**: a single actor will not be endowed with all resources required, as presented in Principle V, section 4.4.1. Like existing governance research, this study postulates that valuable action for society will require a multi-actor approach to governance. Findings thus suggest that as much as different viewpoints are brought together in a design process also different resource or capability endowments are: This point refers, rather than the interrelation between the individual actors and value creation, to the value identification part, thus the input and readiness to input by each involved actor to a design-led practice or policy program. This capability and resource element is one that must be stressed more to navigate the commercial and economic angle of a design-led process in policy; at least, the former must be tied back to (business) viability and monetary considerations. Scholars propose that the *"requirements"* of the actors in the design process (of society and people for whom the outcome is intended or the designer's subjectivity, taste, and style) are balanced in the solution (Maciver et al. 2016, 2468; Cross 1997). This hereby clarifies that requirements comprise both desirability (thus needs) *and* resources concretely.

The resource endowment to host or take part in a design process seems strongly linked to the kind or nature of the organizational actor and industry it pertains to: *Policy institutions,* despite trying, are doubted (in the interview sample) to dispose of the financial and human know-how and resources that would require leading fully fledged design initiatives. Hence, actors such as *corporate* or cooperative *actors* jump in, who can compensate for the former and/to showcase valuable routes for society. The resource limitations are acknowledged as a fact by policy managers and - to establish a value-driven approach from international policy - 'pooling' of actors is suggested to drive design-led policymaking: *"Best interest policy-making"* requires "*us as supposed experts*" to bring "*less well resourced partners*" with us (C3IV2). Considerations related to resource balancing and resource (capability input)

[104] E.g., C1IV18: *Design in policy cycle initiation phase:* Bringing different actors together, to consider different ("*future*") perspectives; *Design in policy cycle implementation:* Adjust processes to needs of people/end recipient ("*those [who we] want to reach*"); C2IV21: Project lead operating by summoning legitimate stakeholder together, that all solve for the patient's need.

limitations might be hindering actors to join and participate consistently in a policy practice, whether design-led or conventional. In case III, companies did leave the design-led initiative as it was unfolding, due to priorities outside of the initiative, notably Covid-related ones (e.g., C3IV5 reported). In such cases, limitations arise not out of the design project or policy design practice itself, however put a toll on the quality of an output of a design-led public value proposal.

Finally, a contested element in the resource or capability context remains **who decides about the final outcome of a design-led policy content created**; and how transparent the shift from formulation to decision-making is: the latter addresses how to untie the decision-making authority from those who pledge the highest stack of capabilities or, e.g., financial resources, in an initial coalition. Actor-bound externalization and capture of value association need thus be decoupled from actor-bound resources pledged. Also, related to the former, comes the capability to express a value association in the first place: Awareness about values or value associations is a precondition to externalizing the given value and its association in the first place. This suggests that best interests (as C3IV2 named it) can only evolve out of a design process if the best interests are consciously present and, through an ideal process of interactions and extraction opportunities, extracted and safely expressed. Design practice hence needs to ensure that authentic associations can be made explicit at their origin (at the individual). The former happens, in case III design practice, by breaking down policy proposals into parts or tangible fractions that serve association capture. Preliminary recommendations from the program showed that certain associations with a policy theme might make actors vulnerable and hence leave those value associations unexpressed (see 5.1). C3IV8 talks about transparency reports in the context of making corporate product policy which leads to wonder whether similar transparency reports could be made available for design-led processes in policy, namely by mapping interactions and links between actors, contributors, resources pledged, etc., serving ultimately to provide more insight into policy content creation and content decision-making. The former suggests that an intermediary that orchestrates and harvests from the interrelations between the individual actors (and their perspectives) as they create value from the design process might be a crucial and a required step in that regard. At this stage, as Norman (2005, 17) suggests, the *“strong, authoritative designer”* or intermediary will be required, to evaluate suggestions themselves and with regards to the requirements of the policy issue or *“the activity”.* This includes *“ignoring requests”* for the sake of *“cohesion”* or *“understandability”*.

5.3. Design in the international policy context

Policy made by design practice at international governance level empowers policy content (co-)creation and lets **two spheres of policymaking** arise: the collective creation for policy content (vertical; "sphere I") and the policy decision-making upon that content (horizontal; "sphere II"); see again Figure 19 further up. Scholars have referred to what is termed sphere I as the so-called "public sphere", which can be defined as *"a common place in which members of society meet to discuss matters of mutual interest."* (Edwards 1999, 163). They also confirm so-called *"public learning potential"* that arises from public discussion, which points to some kind of sphere II existence in which *"the opinion of the relevant public is anticipated or used instrumentally by policy-makers."* (ibid, 169). The former is of utmost importance in the context of international policymaking, in which particularly ambiguous and strategic topics are discussed, as the presented cases in this research show (e.g. AI governance in case III, or the governance of new and emerging technologies altogether, case II). Secondly, and as scholars underlined already, internationalization affects domestic policymaking (Knill and Tosun 2008), meaning that the international realm is said to heavily affect what the national governance realm pursues. A core question in this context remains however how this public sphere is constituted, as it bears significant weight in the shaping of the direction of where society goes.

Design principle I reveals (see section 4.4.1) four suggestions ('styles') of how to gather and assemble stakeholders in international governance, based on case III design practice. The four suggestions/ styles point to how the public sphere should be chosen as participating in policymaking at the international governance level, namely: (1) *functional in the political context* (early legitimacy-building, accountability-fomenting, work with lower level governance levels to then scale results); (2) *instructive for the policymaker* (actors with diverse backgrounds in one room, representing different perspectives and thus robust policy pathways, considering the ultimate beneficiary of the policy or policy user); (3) *inclusive in participation by society* (considering the marginalized, i.e., usually not involved in the discussion; integrating the affected and thus recipient community; consciously including problem view from the stance of the affected); and (4) *(re-)generative to decision-making for society* (setting forward-looking and visionary policy directions that are scalable; considering actors' interests in contributing to make decisions; creating future-proof policy; taking a long-

term view on policy). These four point to the fact that the international governance realm is challenged by the range of potentially affected and marginalized actors and representation of various actors. The former may entail only indirect outreach to the very affected, via the particular nation state. This is what Case I demonstrates: Persona cards collected by a local NGO were used to include the voices of young people; instead of the latter, political decision-makers were included into co-creation. In case II projects, at no point are citizens - as the ultimate policy beneficiaries - integrated or consulted. The collaboration ends at the level of the particular country. In this case, co-creation with the marginalized or the affected happened through product design by the private sector company that was leapfrogged for the same project. That means, design practice at international governance level may stop at the national one, or at a private sector company, or may be outsourced to local NGOs, depending on the particular national infrastructure or preference. The latter is where ultimate state and decision power lies, and thus sphere II again comes into play. Contrary to Knoll and Tosun (2008), as mentioned just above, this thesis points also to how the national context affects the international one in international governance.

As for content creation, the global level may bear **heightened opportunities to identify and fill policy knowledge gaps.** It naturally hosts a larger variety of actors. Design-led practice might constitute a fertile ground for more initiative and action taken to close such knowledge gaps, notably in the absence of a policy mandate and/or under potential inhibition to pledge resources in a given policy actor's domain to do so (see previous subsection on the necessity of the actor mix under resource or capability constraints). This holds true particularly for case III: Other, comparative experimental approaches to the design-led one deployed in case III exist yet are deployed by national regulatory entities (as regulatory sandboxes). Case III chose, as a workaround, policy prototyping, to be able to fill knowledge gaps in AI policy without the required national regulatory entity partnership. Sphere I and sphere II focus are to be distinguished in actor identification and need focus, thus knowledge-surfacing or -addressing: Generating public value starts by identifying not only the relevant actors per se in the process to decide over a given policy topic but the constant establishment of the link between the actors and the knowledge gap - the theme and needs - to uncover (e.g. design principle I and III, coalition alignment/initiative around a theme and orientation around initial intent, respectively).

The findings further confirm that the choice of the stakeholders, thus “legitimacy” questions and whom to decide with in terms of legitimizing content in intl. governance, seems to prevail

and dominate policymaking. While it is about actors collaborating horizontally in intl. governance, legitimacy-building remains also **a choice of vertical integration, i.e., of involvement of a wider public and realities** to build representative or robust policy content in the first place. In sphere I, the relation and link of actors with the given policy theme are at least as essential to build quality of content as the discovery of including legitimate actors, that will decide over content in sphere II. As Nanz and Steffek (2004) put it: "*[A]ctors from organized civil society play an important role in the creation of a public sphere. They have the potential to act as a discursive interface between international organizations and a global citizenry"* (315). In the context of the just above mentioned four styles or suggestions (see paragraph two in this section) of how to assemble actors at the international governance level arise questions of quantity and quality: Can there be too many stakeholders to be included in a design-led policy process? Or can large groups become difficult to manage? In the cases analyzed in this research, smaller projects and localized projects help navigate quantity. E.g., case III is implemented with national jurisdiction partners. Smaller, qualitative projects are run when it comes to the affected group, i.e. roughly a dozen participating companies from region B were included in the case III design practice. Case II equally works with multiple projects and regional or lead user collaboration (see 5.1). It seems, hence, that quantity is not a second order priority but is reached through multiple smaller, localized projects when design is deployed in international governance. Case III, additionally, works with iterations across different regions (see practice description section 4.4.).

Also, for policy-making processes at international governance level, the choice of the stakeholders and whom to include in a policy-making process, and when, needs to better distinguish between sphere I and sphere II. A first **distinction** needs already be made **at legitimacy and accountability level**: Legitimacy, thus actors holding a mandate and politically legitimizing a policy content proposal in sphere II, is not equal to actor accountability, thus exchanging and collecting information to close a knowledge gap in the process of co-designing policy content in sphere I, the public sphere, and at value identification stage. Edwards (1999) equally speaks of the public sphere as upholding *"democratic values"* and as *"public **accountability**"* (researcher emphasis*)* and *"active citizenship"* (169). Organized civil society plays a key role by exposing global rulemaking to public scrutiny and bringing citizens' concerns onto the agenda (Nanz and Steffek 2004). As the findings reveal (see sections 4.4.3 and 4.4.4), the design-led content creation itself is not about legitimizing in political terms but empowering all actors in the process to share holistically their viewpoints (public value identification) and making more holistically informed and thus relevant decisions in their own sphere (public value creation throughout). The two

spheres that emerge from this study on design practice show design practice does not dilute political decision-making or raise questions of legitimacy in the decision-making stage, but rather underline asking whether decisions are made based on legitimate – widely viewpoint-accountable and robust - knowledge or content. This holds particularly true for the international governance context: The latter role is to create knowledge in complex domains. At the same time, (usually politically legitimized) decision-making upon that knowledge happens at lower (national) level governance. The latter is also confirmed by Nanz and Steffek (2004), who argue, in their paper on participation and the public sphere in global governance, that the democratization of global governance will ultimately depend upon the creation of an appropriate public sphere that connects decision-making processes with transnational constituencies.

6. Conclusion overall

6.1. Findings summary

The underlying research aims at understanding what value design brings to support the identification and creation of public value in the context of international policy. Across three prominent international governance institutions, findings reveal that design practice at international governance level designs *into* knowledge gaps: Design practice is thus a knowledge-building instrument when applied to policy making in the domain of international governance. It is a combination of relation-based interaction and end user focused service design that must start with the most vulnerable or affected - the “policy end user” or “policy end recipient” - first. It then, throughout the design process, continuously iterates outward to integrate the perspectives of additional actors involved in policy content creation (vertical viewpoint integration) and decision-making upon the former (horizontal viewpoint integration). Thereby, design generates public value across two main stages: It first identifies, from stakeholders, what is valuable to them with regards to a particular societal concern, thus extracts need from context, notably through workshops (design *for* policy) or prototyping (design *through* policy). It also creates or lets unfold collectively held notions of value(s) that are externalized and built upon (see knowledge gap, section 2.5). This means that design

plays a vital role in overcoming bounded rationalities or knowledge and, i.e., knowledge tied to one actor without being externalized and hence put into exchange (compare section 2.4.2). Design helps expand individual knowledge and changes viewpoints, including fostering productive empathy. The former, overcoming bounded rationalities, is particularly pertinent when extraction of needs (vertical axis) happens from contexts that are far removed from those making decisions (horizontal axis), which is the typical context policy navigates in the international governance context. Design practice thus heightens the focus on whom to include into the creation of policy knowledge (sphere I) and its decision-making (sphere II) (compare section 4.2 or Figure 14). This study into design practice at international governance realm brings center-stage what has come to being taken for granted in policy-making yet is the core to value generation potential from policy in the first place: Namely the decision on what actors and thus *whom* to include when policy content (policy knowledge) is being created, and how the actors are put into relation, thus the *practice* or process behind the former.

To *identify* what is valuable, design practice plays a crucial role in building and managing - i.e., in orchestrating - relations between actors that are involved in and underlie decision-making in international governance (section 4.4.3, *Pathway 1: Design practice creates opportunity for relevant and novel encounters)*. It equally allows for the exploration and recognition of realities and value associations that might otherwise be overlooked or misrepresented by individual actors or counterparts (section 4.4.3, *Pathway 2: Design practice supports decision-makers with new and deeper situational awareness and understanding*). It also enables actors to more readily identify with the given societal concern - thus the given policy theme or issue - by making policy relatable to and hence able to integrate in their particular decision-making context *(*section 4.4.3, *Pathway 3: Design practice increases decision maker capability to take agency for societal balance in their respective decision-making cycles and practices).*

By providing a framework for inclusive and comprehensive analysis (departing from the most affected, integration of heterogeneous viewpoints), design practice in international policy results in a combination of methods to overcome bounded rationalities. It involves the deliberate exploration of various perspectives, contexts, and interests, aiming to uncover and appreciate the range of realities and value associations present. This is particularly vital for international policymaking, which naturally includes a broad set of actors and spans across different cultures and nations, value associations, and expectations. Design practice does

not follow one clear-cut practice, but rather a set of principles, see section 4.4.1: **(I)** It **forms an initial coalition of willing actors**, that is eager to contribute with knowledge to a given policy theme and integrates affected and interested actors alike. What is particular in the international context is that various actors, also outside the policy realm, can take *initiative* to create content (not to make decisions, which is mandated and remains political). **(II)** It **caters to productive exchange of knowledge** by integrating a wide actor base in order to obtain fresh knowledge. Integration of the actors is *functional* in the political context, i.e. legitimate political actors are involved; *instructive* for the policy- and/or decision maker, e.g. including diverse and representative backgrounds; *inclusive* in participation by society, i.e. marginalized and affected communities, usually not involved in the discussion, are involved; *(re-)generative* to decision-making for society, thus working towards proposing forward-looking and vision-setting, future-proof, and sustainable visions. **(III)**: It **provides and pursues a concrete starting point and topic** that is specific, around which to collect viewpoints and summon the actors. Design is thereby securing an initial theme that is intended as an anchor point right from the start and throughout the process of actor involvement and knowledge generation. **(IV):** It **provides the opportunity for *all* actors involved to expand knowledge and change viewpoints**, which leads to heightened awareness around the policy theme and ongoing practical learnings, for public and private sectors alike. This is standing in direct opposition to the unidirectional summoning of knowledge for policymaking done through, e.g. consultations, which serve to propose actionable knowledge for the policymaker however not those who bring the actionable knowledge in (e.g. the private sector as policy recipient or user). **(V)** Design also **ensures that the integrity of all involved actors be preserved**. This means that roles of actors in the given governance realm are not turned around or switched but, on the contrary, reinforced and heightened. E.g., the integrity of the policymaker or government delegate is preserved as the instance making ultimate decisions; the affected or vulnerable community, whose perspectives are brought in, are catered to by preserving their vulnerabilities and 'realities', instead of interfering with them to serve the policymakers` necessity or reality. **(VI)** Finally, design itself **acts as and requires an intermediary that builds outputs** from all actors and their interactions - the relations - involved, to preserve the individual actors' roles in the design process and secure integration of their perspectives from the start and throughout. This leads to 'best interest policy making', as one of the interviewees referred to it (see section 4.4.1, principle VI); namely policymaking that takes into account and manages all involved actors` perspectives on an ongoing basis.

Design practice in international governance follows principles rather than one clear-cut practice or approach in policy making (section 4.4.1). This suggests that design evolves out of the context it is deployed in. Individual perceptions and decision-making processes, shaped by professional embedding and contexts, condition how design is put to work (see policy-making rationales behind public value creation, section 4.4.4). Across the investigated contexts contributing to policy in the international governance realm **design supports value creation from policymaking** given it: **(1)** Augments practical ability for implementation as well as impact from policy; **(2)** Puts people and needs policy builds for to the forefront; **(3)** Enhances alignment and unity around a particular vision; **(4)** Suggests meaningful policies that simultaneously secure early legitimization of a policy theme, and **(5)** Enriches a policy proposal by real-world circumstances from the get-go and throughout policy evidence collection.

Faced with bringing diverse actors together, design helps overcome endowments of a given, involved actor`s realm with either legitimacy, resources, or capabilities. According to interviewees (e.g. C3IV8, C1IV26, C2IV2), particular subregions in the context of international policymaking are less or more ideally equipped with resources to act on policy themes. They emphasize, too, the lack of available fora and spaces to let meet and gather a variety of heterogeneous viewpoints and participants (e.g. C3IV5, C3IV3, or C3IV6), or the absence of a strategic actor altogether (e.g. C3IV1). All the former limit knowledge generation and knowledge-making progress towards forward-looking policy decisions. The findings suggest that the design process starts by securing legitimacy first, thus building the given initial actor coalition that makes decisions upon the content and pledges resources, with the exact *practice* - thus the policy - of *how to* generate public value coming in last. The public value triangle should hence be extended by a heightened focus on the policy-making *practice* deployed in creating public value, regardless of the particular governance level of policymaking, be it national, community, or international.

Central for the former is that design practice fosters productive empathy (see Annex B, C2IV13), i.e., that it heightens sensitivity and respect for diverse perspectives: By actively seeking out and departing with policymaking from non-, under-, or misrepresented realities and value associations, it promotes inclusivity and international policymaking processes that are grounded in the policy recipient that the given policy service is destined to serve in the first place. It hence orientates policy towards impact from the get-go, inspired as such by ‘reality’ as an additional piece of evidence. Design helps to bridge gaps in understanding and

promotes dialogue and collaboration based on a more comprehensive and accurate representation of the various actors involved.

In summary, design practice in international policy plays a vital role in building and managing relationships between actors in the international governance domain. By engaging in design practice, actors gain a more nuanced understanding of the different stakeholders to include (see e.g. 2.3), the latter's and their own viewpoints. This process allows for the identification of shared interests, common ground, and potential areas of cooperation that may have been overlooked in individual decision-making otherwise. Design encourages a holistic approach to policy formulation and negotiation, which considers the multifaceted nature of global challenges and the diverse needs and aspirations of various actors with regards to them. It exposes and acknowledges the realities and value associations that might otherwise remain unseen or misrepresented in individual perceptions and decision-making. By adopting a comprehensive and inclusive approach, decisionmakers contributing to policy making in the international domain - be they private, public, third sector, or participating individuals or experts - can enhance their understanding about policy themes, promote empathy for each other's contexts, foster cooperation between each other, and be inspired to take initiative in their respective realms.

6.2. Review: How the research question has been answered

This thesis project addressed the research question *What value does design bring to support the identification and creation of public value in the context of international policy?* based on three objectives: 1. Understand the state of the art knowledge and the relevance of design for public value from international policy-making; 2. Understand the design practice in international policy and its relevance; 3. Conduct a participatory design in policy project to reveal the practice of design in international policy and its contribution in generating collective value. The literature review addressed objective 1. Cases I and II, the interview-based cases, helped develop knowledge for objective 2. Case III, the practice-based case, helped tackle objective 3. All findings are discussed in the discussion section (section 5), which brings forward new knowledge and compares with current one.

6.3. Contributions to knowledge

The findings confirm that the value design practice brings in the context of international policy arises at four main levels. They comprise *design as a tool* in international governance policy making, the *norms and culture* that design practice is embedded in, and the *philosophical* level. The contributions to knowledge were discussed extensively in section 5. The contributions are restated and synthesized as follows.

Design as a tool in international governance policy making

This study builds upon and expands the existing discourse in policy and governance literature: Its findings reveal - like earlier research by Bozeman 2002 or Jørgensen and Bozeman 2007, 2002 - that public value generation happens not at the implementation or end stage of a policy proposal. Instead, public value arises on an ongoing basis ("generative view"). First, policy and governance literature have for long recognized that public value manifests itself not just at one step of policy making (Stoker 2006 or Moore 1995). Similar to that, and in the underlying investigation, design reveals itself as a process that creates value ongoingly, as a generative process. Second, this study's findings confirm and expand earlier research in design that finds that design enables a holistic and authentic picture for policy making, through continuous interaction (e.g. compare Polati Trippe 2019). This is given the heightened attention on whom - what "policy (end) user" - to include in the making of policy, and how to. Policy is based on relationship-building and on actors with their respective and particular viewpoints as the smallest units of knowledge capturing. Thirdly, this study finds that design practice in policy making presents complex issues (such as policy) in a more understandable and thus tangible way. Building upon and concretizing to date scarce literature in the field (e.g., Halse 2016), the study concludes that design helps make tangible the intangible in policymaking, be it through prototyping or the concretization of user needs at the front-end of policy design. The former suggests a holistic approach that helps ensure that the final design goes beyond the *tangible* features and considers the *intangible* aspects that can greatly influence user satisfaction and success of a designed artifact (i.e., of a given policy). Enabling a change of value associations and perception of a topic, individual value (IV) is altered and augmented (value identification, e.g., of a company implementing a policy).

Fourth, contrary to a total reshuffling, radical innovation, or groundbreaking mindset shift of a state of play in policy, design aims at being impactful by taking into consideration reality and lived experience as is, or by preserving and reminding of reinforcing roles and responsibilities of the actors already present and contributing to and operating in the policy- and thus society-making arena. Contrasting what disruptive notions of innovation (Bower and Clayton 1995)

may postulate, the underlying research into design in policy at international governance level does not require a total redefinition of roles. Rather, it brings to the surface that existing roles should be leveraged, visions preserved, and mandates in decision-making be respected and fully leveraged, similar to what design researchers have postulated (Junginger 2015). Policymakers and politicians are, for instance, expected to be the ones to decide about the proposed content created, thus the proposed collective value proposal originating from the design practice under concern (originating from sphere I); they are expected to decide about the last step towards public value creation (sphere II). The intermediary, and the departing coalition, are expected to establish the missing link between policymakers and policy recipients (Case III).

Fifth, design practice lets arise two spheres of policymaking: the collective creation for policy content (vertical; "sphere I") and the policy decision-making upon that content (horizontal; "sphere II") in the political sense. This study finds the former two spheres to help distinguish legitimacy and accountability, while scholars so far have more vaguely referred to a 'public sphere' (Edwards 1999) and to some place in which the *"opinion of the relevant public"* (ibid, 169) is used by policymakers. What results as new in this research is also that design practice plays a vital role in providing insights for policy making but is not directly engaged with policy decision making. For policy-making processes at international governance level, the choice of the stakeholders and whom to include in a policy-making process, and when, needs to better distinguish between sphere I and sphere II (accountability and legitimacy), thus between content and decisions made upon that content. Lastly, design practice goes beyond official mandates: this provides heightened opportunity for actors to get involved in policy (its content creation), enables naturally a larger variety of actors, and empowers them to share viewpoints (horizontal and vertical integration). In the international realm, scholars refer to actors of "*organized civil society"* playing a vital role as the *"discursive interface between international organizations and global citizenry"* (Nanz and Steffek 2004, 315). While this is true also in this study, the findings of this study reveal additionally that design-led practice constitutes a fertile ground for more initiative and action taken to close knowledge gaps at international level. The former is vital notably in the absence of a policy 'mandates' and/or under potential inhibition to pledge resources in each policy actor's domain to do so. The choice of the stakeholders and whom to decide with in terms of formulating content for international governance needs to prevail and dominate policymaking.

Norms, culture, and ways of working of design practice in international governance policy making

Design puts the making of - thus the how to and practice of and behind - policy, and those who make it, front and center. This study proposes an activity-centered over a purely human-centered design approach for design in policy (Norman 2005): A fourth circle, a “practice” wing, should be included in the hitherto three-wing public value triangle model by Moore 1995. This is to underline that it is the practice - and activities - society decides to deploy for policymaking that will create public value or not (or less) from international policy. Design can be that very practice that creates public value in policymaking. With the former, the findings of this study also draw attention to a more critical exposure to *practice* in the policy-making realm, i.e. the *how to do* or *make* policy. Practice is a natural focus in design (e.g., the methodology or steps deployed) but less questioned and interrogated in the policy camp.

Next, this research reveals that design is malleable and works in all decision-making contexts of policy decision-making. Design is a multi-stakeholder approach itself, yes. But this study reveals also that public policy is made not just by public managers in the public realm but is a collective effort of policy and other (e.g., product development) delegates across industries (see section 4.4.4). Third, design will require resource commitment from various actors: The findings herein show that a single actor will not be endowed with all resources required, notably when it comes to legitimacy or capability considerations (see section 4.4.1, Principle VI). Instead, this design study suggests that we need a multi-actor approach to designing in governance and to governance itself, which confirms what existing governance (see section 2.3) and innovation studies (e.g. Mazzuccato) already indicate. Design scholars have earlier proposed that the *“requirements”* of the actors in the design process (of society and people for whom the outcome is intended or the designer's subjectivity, taste and style) are balanced in the solution (Maciver et al. 2016, 2468; Cross 1997). Finally, this research suggests that we need a new intermediary of interests or so-called “best-interest policymaking”, as one of the interviewees proposed (see section 4.4.1, Principle VI). This builds upon Norman`s proposal (2005, 17) for a *“strong, authoritative designer”* or intermediary (see findings section).

Philosophical considerations for design in international governance policy making

Design detaches from individual-centric, premature judgment. Simone de Beauvoir (The Ethics of Ambiguity, 1947) speaks about transcendence, that is, people must rely on each other to achieve their goals. Learning from what scholars found in business innovation studies (Cohen, Bingham, and Hallen 2019), policy, too, seems to profit from deploying design insofar as that design opens policy up to a greater and more representative variety of viewpoints and their integration into the making of policy. Design also proposes that that ambiguity itself in policy is not the problem, but how decision-makers relate to it: Wickedness has been recognized already in the 70s (by Rittel) and extensively debated in design for policy (e.g., Buchanan). As entrepreneurs in this world or as decision makers about the societal trajectory, we find ourselves inevitably in a situation of ambiguity. Design can help work *with* and relate to the ambiguity that decision makers inevitably face. Finally, design takes bounded rationality as a departure point, meaning it offers a way to work with relational ambiguity, the dual state of individual and collective identity, in policy and in society. When deploying design in policy, actors outside and in the public sphere are enabled - in their particular nature and role (e.g., entrepreneur, policy maker, etc.) - to propose solutions for policy and take agency in society´s course (Van der Jagt et al. 2020). At the same, they satisfy their individual identities and roles.

Implications for practice

The practice of design deployed in case III is a practice that suggests itself to be implemented and rolled out at municipal, city, or national and regional, level. The practice is a mix of product and human-centric design (see section 4.4 Design practice rationale and approach), that is easily transferable to different geographical contexts. That implies, once more, that design is highly dependent on the context it is deployed in, similar to what is found in the literature review (chapter 2). Also, design practice works *with* its context. The elements that are present, whatever they are, are what becomes capital to work with in a design process.

The six principles of practice developed in this study are a symbol of the thesis findings: namely that there is no one single practice of design in policy that is used across the different cases. The design elements that the three practice approaches have in common are the elements that are distilled from the three cases and fleshed out as the six principles to designing in policy (section 4.4.1). Rather than following one single practice, a practitioner of design in policy - regardless of her exact role (policy officer, politician, business owner, product designer, etc.) - can expect design to follow major milestones or cornerstones but will have to adjust the practice accordingly. This is in line with what action research suggests (see section 3.3.2): Schön points to reflections by the design practitioner on how problem-framing and

situations can change or how norms and possibilities are prioritized or available over others (reflecting “in action” and “on action”, during and after work). Adaptation of practice happened in case III practice that had to be adjusted going from region A to region B (see next subsection). Nonetheless, there are pillars that remain the same, within the practice-based case III or across the three cases. They include, for instance, the careful selection of the actors involved, starting with the most affected first and gradually adjusting the amount and kind of actors. They also include the integration of an intermediary that moderates not just the design process but also between the outcome of the design process (content) and the decision-making upon the former (decision-making upon the content; see spheres I and II in next sub-section).

6.4. Limitations

A number of limitations arise in the context of this study, which are referred to as follows.

6.4.1. Time

Design for policy is a concept and practice that has moved and developed fast. It hence alters over time. From that, changes result in the debate and practice of design (see, e.g., literature review, section 2.4). This is particularly relevant in the context of this study: Its methodology covers on- and off-site data collection and analysis throughout approximately five years. Viewpoints by research participants change over time. This project constitutes merely a snapshot in time and a one-off transactional account of design in international governance, at the time of gathering data on the former. Incorporating each change or altering consideration of the concept of design in the analysis is certainly an impossible task to be done. At the same time, this study’s approach navigates the time constraint by having considered practices of design throughout the above-mentioned period, across three different and relevant actors in the international governance context. In essence, depth and richness have been secured by quasi-longitudinal research into the international governance cases and their design practice(s). Relations have been built with study participants and an ample network was leveraged; comprehensive data was collected, and rigorous analysis conducted, all aspects carefully navigated while faced with the constraint of time.

6.4.2. Confidentiality and commercial sensitivity

The conducted design practice is conditioned by many more elements than the practice stages present in this thesis: such as the buildup of a brand, the first iteration of the practice from region A to B, the cross-pollination from region C (which was a program I managed entirely and drew learnings from in addition); the fact that the program was handled entirely digitally and under a global pandemic let program participants alter their priorities or drop out of the program, for instance. While acting as a limitation to the design-led process, these contextual elements seemed to constitute also essential building blocks of the design practice itself (compare action research, section 3.3.2). This study proposes that such elements can pave the way for a given contextual reality that design practice must, inevitably, (learn to) navigate. They show that a design practice can never work without considering the context in which a designer - or policy officer deploying design - lets it unfold in. Therefore, a meticulous understanding of the context is indispensable to come up with the design practice most adequate for a given domain and purpose. Context as a factor to design with or around is even more important to consider in a domain such as public policy and the craft of society and its evolution. The latter are ambiguous and undergo quick and unforeseeable requirements for change.

The key learning from the former is hence: What might appear as constraints are the enabling factors that let the practice emerge and make it unique. In a policy rationale, the question might no longer be: “how can I *avoid* a bottleneck or manage it” but, confirm with the researcher’s deployed design practice in Case III, “how can I learn to work *with* it”, “how can I learn to factor assumed outliers in”, and integrate it/ them as a unique factor propelling the design approach and enabling it in the first place. It is, therefore, essential to communicate these constraints and unique context to understand any design practice (compare to the description of the design practice in section 4.4). Future research into value from policy through design practice should investigate how the context or boundaries are factored into a design practice in international governance, to include them as contextual factors in a more considerate and institutionalized fashion. Such an approach will provide a more holistic but also realistic picture and understanding of design, and why it is different from other approaches and hence particularly valuable in a given domain. For those who would like to replicate the design process, it will help better identify and qualify departure points: a more “mature” design process and hence iteration might look different from its first implementation, enriched by contextual factors equally extracted and learnt from, aside from the design practice deployed itself.

6.4.3. Divide between the policy-making spheres I and II

Design practice navigates public policy at international level in substance and thus (participatory) content creation matters as well in political spheres, i.e., the decision-making realm. On several occasions, the presented findings reveal that design enables the craft of content through a conscious and heterogeneous move towards two elements: namely, broad inclusion and concise and planned-for enablement of externalization and exchange of value associations that pertain to an inclusive actor base. Out of that, a notion of value that is co-created and collective is defined. How such a pitch or proposal for public value, based on the co-creating collective in sphere I, gets decided upon by the inner and second circle of decision-making sphere II - and hence gets the chance to unfold into actual public value - might not be a direct consequence of content proposed by the design practice project. That is, what design practice identifies and creates as public value from policy is not a direct twin of what policy (policy officers) might identify and create as public value. The former is a limitation in the methodology of action-based research itself: The more time had been available to research the project, the more the researcher could have spent researching also with those making decisions upon policy content that is co-created. The discovery of the two spheres, however, was inherent to the methodology as it was deployed (participatory research with those participating in the given design-led policymaking processes).

Research must be made and made available, notably through and with policy officers and high-level political decision-makers in charge, to better understand and strengthen the link between spheres I and II. The former should be in the interest of international policy and decision-makers, notably the public sector ones: The data suggests that design's support to policy through broad empowerment or wide inclusion in sphere I can be canceled out by a lack of understanding of "what's next", i.e., what contribution will have a lasting impact and why or why not. - Understanding better the link between the collective value or policy content design and political decision-making upon such public value suggestions will be indispensable. From case III's design practice one can extrapolate that making the flow of content creation tangible and the stages of a policy-making process more transparent and relatable to the involved participants can preserve the integrity of the given design project and its content created. While this research unpacks the two spheres and suggests the link between policy content creation and the decision-making upon the former as critical and essential bottleneck, further investigation thereto is required.

6.5. Future research

Just as there are limitations to be found in this study there are implications for future research. The following are laid out as follows:

6.5.1. Transferability of findings

The findings of this research arise from investigating three policy-making cases in the international governance context. What is particular to the international governance context is the kind and nature of problems to be solved. They are highly strategic. Also, the nature and number of stakeholders to be included in policy decisions is important. That said, what is the quality of a problem to be solved in the international context can be the quality of a problem to be solved at other governance levels: That means, that problems can result ambiguous to the respective levels they are tackled at, no matter the level. When it hence comes to the number or nature of stakeholders to be included in a participatory design process, the process can be equally complex - encompassing a wide audience and be highly 'vertical' (see section 2.3.2) - at other governance levels. Findings of this study should hence not be thought of as proprietary but scaled to and deployed at lower governance levels, as required. This research proposes that it is vital to follow the design principles as laid out in section 4.4.1. to enhance policy-making efforts further to optimize for public value and inclusive policy outcomes. Certainly, similar research at lower governance levels can shed more light on design practice in policy overall.

6.5.2. Debunking design's innovation radicalism and subtlety of public value creation

Design is more subtle but at the same time powerful than a total makeover or radical revolution[105]: by leaving space for encounters that don't happen otherwise space for awareness-raising is provided for individuals. The former will in turn change perceptions and, likely, the practices of the individual actors and their value associations (design is a way of

[105] Design also does not radically change actors' roles but rather reinforces their particular role and mission as part of the overall actor collective at play in international governance.

addressing bounded rationalities). Value-supporting policy design creates behavior and recreates identities without creating unnecessary noise or disruption. It plugs seamlessly in the context of use and thus serves necessities. It brings together bounded rationalities that are evolving and altering (see also theory chapter on design, section 2.3). How design integrates with these subtle notions of change or context is vital to be researched further.

This study witnesses that value identification from policy arises from sphere I, yet also that value creation is happening already in sphere I: Through mutual learnings, awareness-raising, or demonstrating the impact of policy in the user context (e.g., supporting competitive advantage or augmenting product value to customers) opportunities for a change of perception of policy are created overall. Also, through the former, policy is made more concrete to be embedded into societal actors' behavior, notably those implementing policy (e.g., private sector actors). Thus, sphere I reinforces and interferes with sphere II, perhaps even anticipates sphere II, as impact from policy through design is happening *as the design process unfolds* (through the tangible moments, or the encounters). - *Thus, society and the public equilibrium are built and rebuilt as the design or policy-making practice happen.* - Public value generation is hence a process that unfolds in parallel with policy formulation or proposal stages, *as well as* policy users` decision-making upon the former. - How this change of perception unfolds at the given actor level requires further research, notably at the level of the design practice participants or users and recipients of policy at scale, as much as at the level of political decision-makers alike. Preliminary insights, notably from case III, already speak to policy and political decision-makers' change of perception of themselves (their roles) and their work, as well as the impact potential they see in their actions (see Appendix D). However, more investigation into sphere II and decision-making for public value in sphere II, and how the former depends on sphere I, is vital. Future research in this realm should explore how the shift of value perception occurs in practice among diverse participating actors. Also, future studies could examine how design interventions' sphere I, the conceptual stage, affect the perceptions and behaviors of policy users and political decision-makers in sphere II, the decision-making stage. Finally, research should further focus on the mechanisms at play when design practices, as enabling encounters and interactions, impact actors' behavior, societal equilibrium, or policy effectiveness.

6.5.3. Policy`s strategic value proposition: Policy delivery versus policy discovery

The existing policy cycle does not distinguish between addressing new needs of people, i.e., the needs down the road and thus the vision-setting and strategic orientation, and providing stability and addressing existing and past needs of a given societal context, i.e., the path dependent or administrative functions of policymaking. Responding to new societal needs or being strategic about policies might result as particularly tricky when new mandates, i.e., responsibilities to solve a particular issue and resources, are not yet bestowed. A “delivery-discovery abyss” arises in policy, whereby currently a focus on delivery seems to prevail. Also, if a mandate is assigned but incomplete, or looking at political (inward-looking and horizontal users) rather than the greater societal needs (outward-looking and hence vertical users), the delivery of policy itself remains incomplete. The consequence is that no or only partial value is generated for society at large. Also, policymaking becomes (or remains purely) reactionary rather than strategic and visionary.

This research suggests separate design spaces in policy for policy discovery and delivery. If policy discovery is temporarily occupied by hosts outside the strict public sector, like case III does, they can still be an example that encourages later implementation - and thus delivery - out of the public sector. Like this, actors outside the public sphere are enabled to propose solutions for policy and take agency in society´s course. Such an approach would specifically leverage the greater number and variety of actors present in the international realm and across different regions. See Figure 23 below.

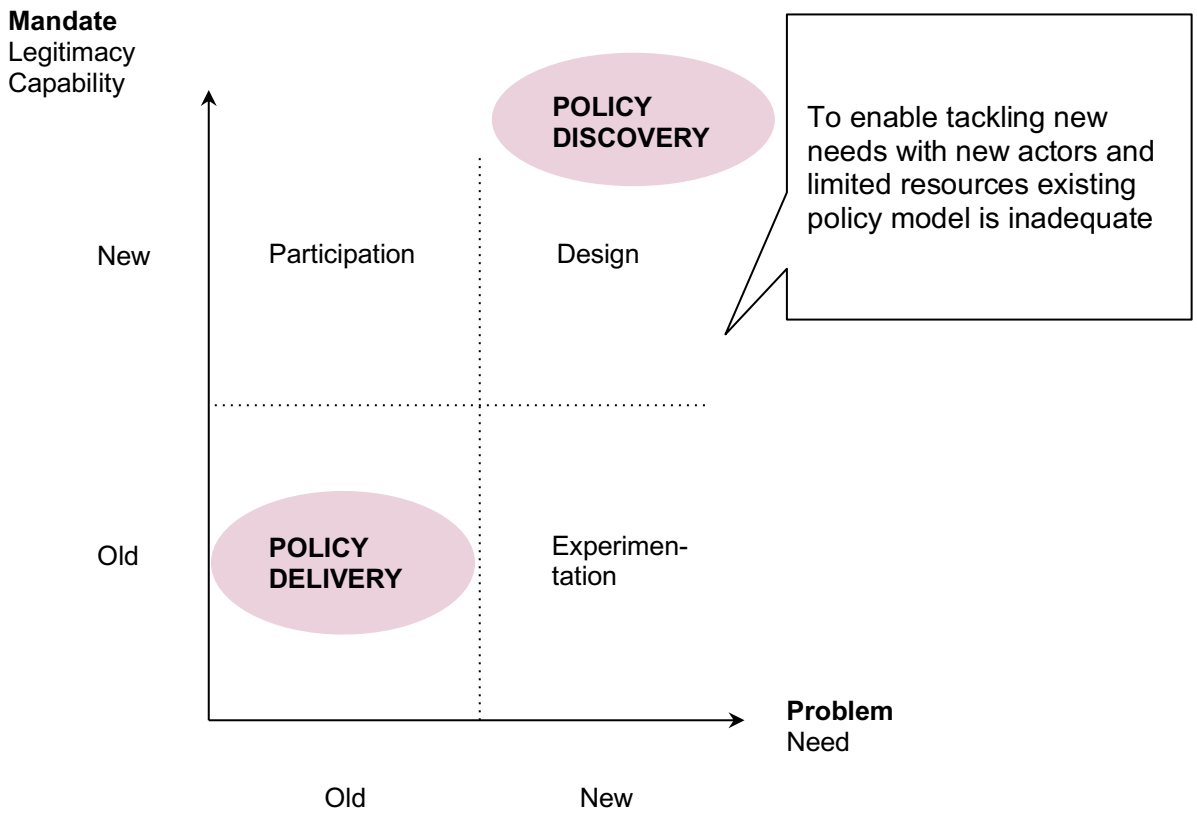


Figure 23: Policy discovery and delivery: Making sense of further design relevance for public value generation in the international governance realm

If we understand policy as an idea of society of tomorrow, more research will be required into how design practice acts as a strategic public policy support, notably in the international governance realm. This could include, e.g., exploring how design practices can be aligned with long-term vision-setting and addressing future societal needs. It could also include investigating the role of non-state actors, particularly in international governance, and how their involvement in policy discovery can influence the development of public policy frameworks that are adaptive and responsive to global but also local challenges. Such research needs to investigate more explicitly how design practice can help policy achieve its *strategic* goals, in line with policy's core public value expectations and core legitimacy of existence: namely the creation of balance in society and the vision-setting that accompanies the former.

6.6. Relevance of this work for practitioners and researchers

This research has explored **the role of design in international governance policymaking**, **as it relates to technology governance such as AI**. While the thesis draws upon fundamental concepts and methodologies from the broader field of design - such as user-centeredness, service design, co-creation, and iterative processes - or acknowledges design thinking as a popularized form of design across diverse sectors all contributing to international policymaking, its investigation into design practice is specifically tailored to the unique context, challenges, and goals of international policymaking.

The doctoral thesis constitutes thus a rigorous exploration into the **strategic role of design practice in supporting the identification and creation of public value within the complex landscape of international policymaking**. Departing from conventional views of design as merely a tool for implementation or aesthetic enhancement within existing policy frameworks, this research adopts a strategic stance, investigating how design can enhance the core underlying function of policy: the generation of value for the public. Encompassing **two interview-based and one practice-based case study**, all fundamentally shaping today's global policy-making scene - namely the **EU Commission's EU Policy Lab, the World Economic Forum C4IR, and an anonymized global technology corporate** - this research provides empirical insights into: the mechanisms through which design facilitates the surfacing of individual value associations with regards to a particular governance issue at hand and their transformation into collectively held notions of public value.

Overall, the thesis draws renewed attention to the fundamental value of lived experience, actors, their viewpoints, and relationships behind formulating policy knowledge or content. It finds that **design employs specific methods and mindsets to bring together diverse actors, externalize their individual value associations related to policy issues, and collaboratively shape a more comprehensive and collectively owned, and additionally actionable, understanding of the policy issue at hand and, notably, the public value therefrom.**

The main, practice-based case, centered on a design-led initiative within a globally leading tech company, offers a unique lens into the application of participatory design in addressing the governance of AI. By actively leading in practice and researching this initiative, this study goes beyond observation to analyze the rationale, process, and perceived value of design

practice from the perspective of diverse actors, including policymakers, technology builders, and end-users, in the setting of AI product building and policy making. The development and application of a thematic framework analysis across all cases provides a robust and systematic approach to understanding the multifaceted contributions of design.

The findings of this research compellingly demonstrate that **design practice acts as a vital knowledge-building - or "content (co-)creation" - instrument in international governance**. It achieves this by fostering relation-based interactions and maintaining an end-user focus, starting with the most vulnerable or affected stakeholders. The design process iteratively expands to integrate perspectives from various actors involved in both policy content creation and decision-making. This process unfolds in two key stages: first, the identification of individual values related to policy (aka societal) concerns, and second, the collective creation of shared value notions. Consequently, design practice plays a crucial role in **overcoming bounded rationalities and expanding individual knowledge or viewpoints**, having the potential to thereby foster productive empathy across diverse contexts. The study further identifies **five strategic public value creation rationales** that emerge from design practice in international policy, highlighting how design augments practical implementability of a policy, centers on people's needs in policy formulation, supports alignment and legitimacy across actors with a stake in a given policy issue, and facilitates the iterative and ongoing integration of real-world insights into policy as its process of making unfolds.

This thesis offers significant relevance and benefits to several key stakeholders and extends beyond academia:

Policymakers or -managers and international governance or policymaking: This research provides a deeper understanding of what design practice can be and do in international policy, and how it can strategically enhance policy officers' ability to identify and create public value in an increasingly complex and interconnected world. It offers practical insights into deploying participatory and user-centered approaches to policy formulation and development, leading to more **robust** (=representative of actors and viewpoints), **legitimate** (=functional in the political context), and **impactful** (=feasible in practice) policies. The identified five strategic rationales can serve as a framework for integrating design principles into their work, regardless of their organizational embedding. Furthermore, the emphasis on bridging the gap between policymakers and policy recipients can foster greater accountability and transparency. The discovery of e.g. the separation of policy content formulation through design or co-creation practice and decision-making upon the formulated content can give rise

to a better understanding of contextual elements behind today's governance world that still hinder even well-intended policy proposals.

Design practitioners and researchers (in design, technology/innovation, policy/governance): The thesis contributes to the growing field of design by offering a strategic perspective on design's value proposition beyond operational improvements and towards actual impact or value generation from the former. It explores the specific application of design practices within the international policy context, offering a deeper understanding of design's potential and challenges. It identifies key principles for design practice in this field and provides case studies illustrating how design has been used in different governance settings at international level over the past years. The research can thus inform methodologies, strategies, and understanding of a designers' role, notably in shaping public policy or large internationally operating institutions. The developed six principles of design practice in policy and the exploration of different actor assembly styles provide valuable frameworks for practitioners navigating the unique challenges of the international policy context. For researchers, this work opens avenues for further investigation into the interplay between design, public value, and policy-making - regardless of the policy theme, be it AI or other - particularly concerning the "black box" between content creation by design for policy and political decision-making upon that designed content. The identification of two policy-making spheres and the "delivery-discovery abyss" can stimulate further research notably at the intersection of policy vs. politics, multi-actor approaches to governance, and current vs. forward-looking approaches to making decisions about and for society.

Technology builders and private sector organizations: The research, particularly the practice-based case, demonstrates how design-led approaches can facilitate a more effective dialogue and collaboration between the private and public sectors, as they build products and public policy, respectively, both affecting and shaping society. The governance themes investigated in this study concern emerging technologies and AI in particular. By understanding how companies as "policy users" perceive and experience potential policy avenues or regulatory intent, they can proactively contribute to the development of more implementable and ultimately effective policy frameworks. Design-led policy can also lead to a **shift from seeing policy as a mere backward-looking compliance burden to recognizing the potential of policy to stimulate new value creation or inspire novel technology/product or strategy development directions**. The thesis suggests that business and public policy or societal goals need not necessarily contradict each other: The former depends on the *kind* of opportunities for the private and policy sector to engage with each other (e.g., design-led approach vs consultation).

Political leaders and (national) government delegates: The thesis finds that design contributes to the core function of policymaking (namely establishing “balance” in society), thereby enabling vision-setting and the creation of "ideas for and about the society of tomorrow" (= policy definition adopted in the thesis). For political leaders and delegates, design can be a valuable tool for envisioning positive alternatives, identifying emerging societal needs, and developing forward-looking policies that do not just address long-term challenges like technological advancements but also social (in-)equality. The identification of two distinct spheres of policymaking in this thesis can help to strategically engage with stakeholders at the appropriate points in the process, leveraging design for robust content creation (sphere I) while maintaining politicians’ decision-making authority and accountability (sphere II). Finally, the research emphasizes the importance of the practice and methods for bringing diverse actors - inside or outside the political party realm - together effectively: For political leaders and delegates, who are often faced with the challenges of fostering “compromise”, the thesis suggests that design practice provides a "how-to" for navigating meaningful engagement and formulation of policy proposals, also beyond consultation methods.

Civil society and non-governmental organizations (CSOs, NGOs): CSOs/NGOs can act as intermediaries within design-led policy initiatives, provided they leverage an impartial position and understanding of societal needs to bridge the gap between policy- plus product-makers and policy recipients. This research identifies CSOs/NGOs as key actors who often operate with high legitimacy due to their focus and understanding of societal well-being or emerging governance issues. Although they may face limitations in financial resources, they play a crucial role in representing the interests of diverse or marginalized communities, ensuring that the voices and value associations of the latter are included in the policy content creation process. Design practice can be a valuable tool for those organizations to effectively facilitate participatory processes, gather diverse viewpoints, guarantee their consideration throughout policy-formulation processes, and articulate the needs and values of the populations they serve, thereby contributing to a more inclusive and representative policy landscape.

Citizens and policy recipients: Ultimately, this research advocates for a more human-centered (i.e. public value oriented) approach to governance prioritizing the needs and perspectives of those whom policies are intended to serve - applied to policy- or product-making at international level. By demonstrating how design can amplify marginalized voices and foster a more inclusive policy development process, this thesis contributes to the creation

of policies that are more responsive to societal needs, enhance well-being, and foster a greater sense of ownership and engagement in governance.

That said, and based on the case insights around emerging technology such as AI or related technology issues (such as privacy, Blockchain, Drones, or other) investigated in this thesis, the potential for human-centric design or design approaches altogether in implementing in practice international governance notions such as *Responsible AI, Trustworthy or Ethical AI*, or *Tech for Good* is a vast and promising one.

In conclusion, this research makes a compelling case for the **transformative potential of design practice in international policymaking**. The thesis emphasizes policy as fundamentally "relational": International policy is a multi-actor effort, including certainly the public and private sectors alike, including civil society and beyond. By shifting the focus from problem-solving to value creation grounded in human needs and collaborative engagement, this study illuminates how design can contribute to a more responsive, inclusive, and ultimately more valuable policy- and product-building - and thus society-building - landscape for all stakeholders involved.

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Appendix

A. Methodology

Table A1: Shortlist of innovation-driven teams at international organizations (or acting as such) considered to research, including research fit

Organization	Innovation Team, Lab, or Unit operating with Design	Description	*Research fit for underlying study*
European Commission (EC)	EU Policy Lab	The EU Policy Lab is a space for cross-disciplinary exploration and innovation in policymaking, applying design, foresight, and behavioral science approaches to help EU policymaking.	*Connection established in 2015, through researcher's work assignment at the EU Commission; interest in research mutually given and letter of intent set up.*
International Monetary Fund (IMF)	iLab	Established to encourage creative thinking among IMF economists, aiming to make the institution more agile and responsive to global economic challenges.	*Connection established through professional assignments; innovation lab activity however uncertain to closed.*
United Nations (UN)	Global Pulse	An initiative launched to harness big data and artificial intelligence to gain real-time insights into human well-being, supporting sustainable development and humanitarian action.	*Connection with UN teams could be established only at later stage from inception and continuation of thesis.*

	UNICEF Office of Innovation	Focused on developing open-source tools to improve health and communication in low-infrastructure regions, aiming to generate solutions and challenge the status quo in humanitarian and development work.	
	ITC Innovation Lab	Founded in 2015 as a collaborative hub for experimentation, learning, and change within the International Trade Centre (ITC).	
	UNDP Innovation Facility	Launched in 2014 to fund and scale innovative solutions addressing global development challenges, including governance, climate change, and gender equality.	
World Economic Forum (WEF)	Centre for the Fourth Industrial Revolution (C4IR)	Established to co-design and pilot innovative approaches to governance for emerging technologies.	*Connection established in 2016/17, through researcher's outreach upon inception of first C4IR in San Francisco; interest in research mutually given and letter of intent set up. Plus, most obvious initiative to investigate regarding multi-stakeholder governance approach and thus prioritized.*
World Bank Group (WBG)	Africa Gender Innovation Lab	Focused on generating evidence to design interventions aimed at closing gender gaps in earnings, productivity, assets, and agency.	*Connections established through professional assignments; innovation lab activities however uncertain to closed.*
	East Asia and Pacific Gender Innovation Lab	Aimed at generating evidence on how closing gender gaps can help achieve other development outcomes and on what works to close gender gaps.	

	Innovation Labs under the Leadership, Learning, and Innovation (LLI) Vice Presidency	Served as the administrator of the World Bank Group's Innovation Awards Program, encouraging innovative solutions within the organization.	

Note: This table reflects the international organization teams considered to research and put together 2016-17. Some of these have since evolved - in the same or additional organizations - or ceased operations.

Table A2: Overview of interview research per case including main actors involved (when not anonymized)

Case Study	Institution	Timeframe	Research Approach	Number of Interviews	Key Actors Interviewed	Research Focus
Case I	EU Policy Lab (European Commission)	2016-2017 (Fieldwork: Oct 2016, Oct 2017)	Interviews, plus field notes and document collection where required	27 (+1 validating interview NESTA)	EU Policy Lab employees, Commission DGs, OECD Observatory, Waag Society, UK Gov Lab, Northern Ireland Gov, French 27ème Région, Swedish Förnyelselabbet, NESTA	-Relevance of design -Design practice in international policymaking -Governance implications
Case II	Centre for the 4th Industrial Revolution (World Economic Forum)	2017-2018 (Fieldwork: Nov 2017-Apr 2018, Aug-Sep 2018)	Interviews, plus field notes and document collection where required	21 (+2 validating interviews UN Innovation Facility, UNDP, and Public Policy Lab NYC)	C4IR team, WEF representatives, UN, 18f, NY Public Policy Lab	-Design practice in international policymaking -Actor-based policy -Human-centered policy prototyping in tech

Case III*	Global tech company (Design-led governance initiative)	2021-2022	Action-driven participatory research, project reflections in form of interviews and survey	8 interviews + 7 survey responses	3 delegates at corporate host institution, 2 NGOs, 2 international organizations, 2 government representatives (one counted for both policy org & gov.); 5 participating companies (surveyed), 2 experts (surveyed)	- Participatory practice of design - User-driven policy design - AI governance

*Note: The 7 survey responses were collected instead of interviews to ensure a clear separation between the practitioner's and researcher's roles.

B. Practice of design - punctual and continuing

Table B1: Overview of one-time transactional and process-based techniques and formats in use under design practice for policy at intl. governance level - interviewees reporting (preliminary case studies I + II)

Interviewee/ descriptions	**Materials, techniques and meaning present in design practice from policy in intl. governance - *punctual* interaction**	**Generation and surfacing of viewpoints *throughout* the process of design practice from policy in intl. governance - *continuous* interaction[106]**
Case I		

[106] Note that the categorization of point-in-process and throughout-process is not per se straightforward and the categories blend: a one-time workshop can be part of a continuous design practice. Consider it a tentative to better order design practice into tools and materials and one-off transactional interaction over longer-term and multiple commitments to (a set of) transactions

C1IV1	**Participatory debate that goes "beyond complacent acceptance"[107]:** - Moving to "participatory anything" means addressing that "other people have opinions" which leads to going beyond "complacent acceptance": "When you lose complacent acceptance [...] it gets difficult.". Consequently, "civil servants don't want to do it [participatory approaches] or aren't very good at it." **Facilitation and/ or building of different visions, realities, and viewpoints:** - Policy makers require building/ facilitating understanding about different realities/visions/viewpoints: 1. "[...] people have their own views, needs, coping mechanisms and they won't necessarily come along and support our [policy officer's] vision of the world. [....] So that's a sort of modesty check for anybody who wants to do something in life. [interviewee pauses] The other guy might not have the same incentives, may have other things to cope with. But you can only do the best you can."	**Collect "reliable" signals transparently throughout,** **to foment "trust" and involvement with the actors involved,** **and to obtain holistic data:** - Labs [aka design interventions] should experiment with "serious, seriously expensive, sophisticated engagement interventions" - Being explicit about "the process" [design as a process] is required, notably with regards to "the intermediate steps of the conversation", as the former leads then to trust and engagement, which again will lead to more data
C1IV22	**Workshop setup;** **Complementing existing policy knowledge [initial intent stage] and actor gaps:** **-** Design practice helped C1IV22 to include new ideas to design the workshops: "They [EPL design team] provided some ideas, some of them were very good, how to set up the workshop.": **-** Actors in workshops are made aware of where "more information" is required from them [to fill the knowledge gap]" - Consultations ("we ask people in those workshops") are led "when we don't know" about further actors to include [fill the actor gap]	**Policy instrument vs policy prototype[108]** - A regulatory or policy "instrument" is not considered a practice but a / the final output of conventional policy practice, i.e. a final law, a directive, a regulation, or complementary measures - In design-led policymaking, a policy "instrument" remains a "tool", e.g. a prototype, through which to develop new knowledge yet not the end goal

[107] Note: **bold** = synthesized description; "[text]" = words and nomenclature used by interviewees; "[*text*]" = interview-based quotes; '[text]' = my own words and nomenclature; normal text = obtained information through interview unpacking; [...] = own comments; → = Logical consequence or sequence; comp. = compare with other interviewees or previously discussed sections, when deemed helpful or relevant to make connections.

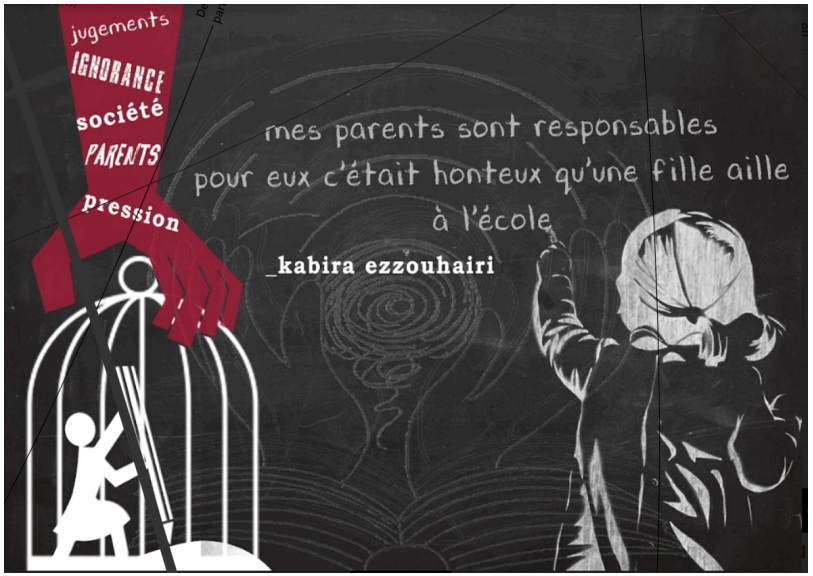
[108] Grey font or shade/highlighting marks the sections that are vital to integrate into case III and my own practice; blue font highlights relevance for the knowledge gap, see section 2.5

C1IV17	**“Enabling collaboration”;** **Sparks new (less “traditional”) conversations and “real listening”;** **Helps obtain a “complete picture”;** **“Mak[es] assumptions explicit”;** **Conversation of “openness” and receipt of “other people’s perspectives;** - (1.) an enabling technology for collaborations - (2.) can help new conversations occur (existing roles, modes and identities of profession are dropped which allows "real listening" and openness for other "perspectives") - (3.) design's user-led or human-centered side allows "structural sort of responses": "... you can ignore my particular silo and go what’s the complete picture for an individual in which our silo only weighs a small part." / "forcing out" of "traditional ways of thinking" - (4.) design is about making assumptions explicit, and therefore testable and provable; "what if" and "putting all on the table", aka make visible/tangible - (5.) design's inherently about "openness and other people’s perspectives"; [..] labs/ design-led approaches really impact the relationships, the conversations, and all those sorts of things. **"[A] space for exploring":** - " safe experimentation"/"talk"/ "rapid failure"/ "prototyping"/"iterations," "and all of those sorts of things"; IV17 classifies them as "helpful" "methods", however relativizes: matter of staff/expertise hired **- Storytelling and "annec-data":** "The stories that illustrate things have made a difference": "...how does an innovation or policy lab that it’s making a difference? How does it know that it’s worthwhile?" A lot of that comes through the stories." [the interviewee refers in particular to the impact measurement stage]	**Practice of questioning identities; make and keep them malleable:** - Design's “a different way of building your identity” and equals "emotions, empathy, people's history and who they are as an individual": "[Design] hits on that personal level because it is about how people think about themselves.”; “ ... that’s uncomfortable, and that stuff a public service or any large organization doesn’t like to think about. It’s all soft skill sort of stuff around emotions and empathy and people’s history and who they are as an individual [called it ‘identity’, see P.12] as opposed to a fungible unit of skill and capability. And that requires different ways of thinking. And for an organization that’s messy. That’s much harder ‘cause you’re treating people as people. (13) ... => "you’re questioning people’s experience and their disciplinary background and saying, that’s all well and good, but now we need more - or new. And that’s all part of people’s identities." [note that this leads back to the actors summoned - and thus chosen - and their identities] (12)
C1IV16	**Qualitative and social science methods:** - Replaces "design per se" background: qualitative approach crosses "very well with the Design for Policy area” **Futures and scenario (=speculative) design:**	**Stakeholder engagement/integration by “direct contribution” throughout the process:** - *“[C]itizens and stakeholders usually only enter in very specific times of policy-making." [*Quote: *" In my understanding, participatory only happens in these very specific times and not at the whole process of policy.”]*

	- Design when in "use" [aka applied in policy context] in tech/digital policy realm is making visual [aka tangible] future scenarios: is "to visualize/ "come up with some visual artifacts" [...]related to future on what could be these future scenarios of use of Blockchain [given technology area]." **"Participatory, stakeholder engagement approach";** **"Hands-on workshops":** -Design for policy includes activities of public engagement = workshops = "participatory engagement approach" that are activity/co-creation oriented: " in public engagement where we're trying to develop some other types of hands-on workshops with DIY and maker trends. This is another way we want to develop a more participatory, stakeholder engagement approach. [=> expands words as go-to policy artifacts] **"A set of methods" and/or "different ways" of transparently collecting viewpoints and otherwise remaining omitted contributions:** -Design can help bring inclusive view/divergent views together [thus help the policy maker/decision maker] - Design offers "a very good set of methods" [IV is very serious in expressing this] to *"put on the table [...] openly different viewpoints"*: the way is for those methods to be: 1. Engaging 2. Non-confrontational and 3. Augmenting/neutralizing = "level[ing]" [...] "the types of contributions on the table.", allowing to bring atypical/otherwise unsurfaced "viewpoints to be put on the table" [Quote: Interviewer: Do you think design can be an approach that can help resolve these diverging, contradictory areas? Example C1IV16 gives: in the "formal setting", thus conventional approach, "[d]esign [is] using verbal and non-verbal, and visual and the type of openness ... I think it's good to put all the perspectives on the table and have people engaging and putting forward their views in a non-formal way."	
C1IV5	**Focus groups:** - Set up of engagement/inclusion of stakeholders: A series of focus	**"A series of focus groups":** - Set up of engagement/inclusion of stakeholders: A series of focus groups with "you know

	groups with "you know anybody who has stake in migration" [policy topic/theme under concern] engagement with "various stakeholders" /ongoing engagement ("following") throughout the year" (= "group of experts, academics, ...") **"Stakeholder mapping":** **-** "Two criteria": *There's these two criteria, power [legitimacy] and then how affected they are by the problem, by the issue.* then you have sort of four types, I think that is quite useful, so you have people who are very powerful but are little affected, the idea was to have a bit of each group and ideally focus on those who are highly affected but have generally little voice in the process to make sure at least you have these because those that are powerful get included anyway and some way or another so that would be part of this stakeholder mapping." **Problem (re-)identification:** -Enable by doing: "do something else" that: 1. make think about a question differently, 2. expands the question or ask a different question **'Relatability' to and/or simplification (of organizational procedures) through user-friendliness/user-centricity:** -"Small-scale intervention" / "Simplifying to make procedures more user friendly" through "design in a way" (implies other methods can work too - design is not the only way) [Quote: "[...] can be used here in this institution to be helpful and like I can think of"; "but we are not doing them actually, you know like, simplifying some of the procedures using design in a way that makes them just more user friendly"	anybody who has stake in migration" [policy topic/theme under concern]; engagement with "various stakeholders" /ongoing engagement ("following") throughout the year" (= "group of experts, academics, ...") **Integration of "various angles" and "different experiences", to "think systemically":** - "There will be" 1. various angles [viewpoints] integrated (going beyond "validation" or "proof") → 2. Integrates different experiences / enables seeing ("not to be blind to some aspect of the problem") → 3. "Forces you to think systemically": "bring different issues that may not at first sight have direct effect on migration" [migration is the policy issue concerned] **"Practical", "small" "steps" for awareness raising and establish openness:** **-** Demonstrate usefulness of design for policy to make policy officers aware/"raise awareness" [given a "new" practice] - Interviewee's assumption is that [small steps] build "credibility"; her hope is it will lead to "more openness": on "small issues we make people in the policy DG's aware of these new approaches." -; Interviewee suggests "v*ery practical small scale steps"* **Evolving "[s]mall intervention[s]" over time to obtain trust:** - But with clear outcomes [tangibility]: small interventions "build trust and credibility"; then "hopefully gradually move perhaps into some sort of bigger issues" [Quote: I think the role EU Policy Lab is as I said through small intervention where we for example demonstrate""
C1IV12	**"Focus groups":** - To get people out of their "normal way of thinking": Stakeholders "lobby [their] own position "rather than really engage" (2); less people are present in focus groups [than e.g. in consultations; researcher`s own inferring] which enables the otherwise "difficult" task of getting people "to come out of their normal way of thinking"	**Showcase results ("concrete outcomes") ongoingly; make them tangible:** - Relevant in two phases: (i) "infancy" stage [of the EPL/design servicing lab, team, or method] lack of concrete outcomes to show: *"[...] we don't have enough results to show to convince people that it works.";* (ii) particularly relevant for "deadlocks" in policy-making on grand policy themes or where one *"doesn't really know how to go forward"* [C1IV12 mentions "migration" or "energy" as such grand policy themes)]

	Focus groups; 'smaller-groups conversations'; **Gathering of different viewpoints around one and the same intent:** - Conversations in focus groups enable "smaller" groups, thus "more interesting, innovative" "discussion"; traced back to (i) more intimacy and (ii) less anxiety to speak up; both intimacy and absence of anxiety enhance the "team dynamic" - *"E.g., at the end of that session we feel there was really sort of - that they appreciated each other throughout the day, and the different opinions, they formed a group, a small community of people that are working on a similar topic and are thinking about things in a different way."*] **Small groups/ "A workshop on a very small scale";** **to facilitate conversation-capturing and thus content-capturing (i.e. reporting):** -Smaller group conversations and exercises enable reporting and viewpoint sharing ["really interesting conversations"] which implies small group conversations turn into a tool or technique in itself: - "*I thought it went really well. It was really interesting that even people having just draw lines from one thing to another on paper was very successful in getting people to think a little more broadly about the topic. People were divided along the food chain to draw sort of mini-systems on the topic and then had to come together and start drawing the lines across. And that's where you really realize that people have no idea how the whole thing is interconnected despite the fact that they obviously have an expertise on the area. With the very simple and basic tool you can get some really interesting conversations. That's where the small group is very successful because you can listen in and capture these conversations.*"	**Make links between intent and outcome understandable;** **Process thinking as focus:** - *"I don't necessarily think that people make policy with sort of bad intention or whatever. It's just very often, the inbetween, from the policy-making process to the outcome, is not properly understood or is a little bit underestimated. And so you don't always get the outcomes that you're looking for, and that's where the research and the policy lab would come in."*
C1IV14	**"Problem analysis", "situation analysis" and contextualization with "desired future[s]";** **Workshop", "meeting points", "hubs", "labs":** -"Proper analysis of problem" equals proper analysis of situation or "desired future"; tools to identify problem and undertake situation analysis can be "labs" or "workshop" as meeting points, or a hub"	**Process-over-output focus (is "innovation"):** - Criticizes the predominant and wrong idea that innovation is an artifact itself; compares it to the iPhone: In interviewee's opinion, innovation is not "the stuff that you can touch" yet first of all "ways to organize, to produce," which lies "somewhere in the process" [it is the "in the process" not the end of process]

C1IV21	**Richer collection of more alternative viewpoints:** - Methodology of design [in this case a strategy "game"] offers viewpoints ("positions") that go beyond the standard positions	
C1IV26	**A "lab format", i.e. Interactive, roundtables-like; using flip charts and post-its, i.e. different materials and creating "open space" to let individuals speak up and participate intensely:** **-** 'Standard'/'conventional' policy-making or "a classic seminar" vs design approach or "lab format": "...yet it wasn't very clear to me, what is a lab as compared to what we usually do.]: A "classic seminar" equals "ppts, questions and answers." vs "interactive, roundtables, using flipcharts and post its, different techniques trying to create an open space where people feel confident to speak and participate more." **"Bring in people";** **"Persona cards";** **"Pictures":** - Design team's practice lies in 'preparation', i.e. 'orchestration' ,i.e. prompting actors and widening their perception or inspiring them: *"JRC [design facilitator] colleagues explained " [...] how they wanted to prepare. They told us they "would want to (i) "bring in people", (ii). the pictures, (iii) the persona cards."* **Integration of perspectives via immersion;** **'Vertical integration':** - Integration of youth [Note: youth is the policy end user in this project] perspective: with (i) "backdrop slides" and (ii) "persona cards" [see visuals in the illustrations on the right] - Images and "stories" [text] on persona card were based on interviews: *"to get yourself [as decision-maker/ policy officer] into this world, to see the world from their perspective [...] So you get profiles of that to see, to recall, 'ah, it's actually those people we are talking about'."* [...] *"It helps you to analyze ["profile"] ... from these individual stories, to get to more generalized challenges."* [abstracting from individual to generic policy	 Illustrations: 3 persona cards

	scale] **Participants in "seminar" are active contributors:** - In "classic seminar" people are 1. "passive"; 2. "on the receiving end" **Interactive exchange in "meetings", with full engagement, active participation and active listening (as opposed to "classic approach"):** **-** *"Lab technique*" to C1IV26 equals: promoting maximum participation; with open and honest exchange; bringing in most diverse set of people into the *"meeting"*: lab was experienced and understood by C1IV26/the team as a "different approach" and as "surprising" "in the sense that": it was "really interactive". - C1IV26 and team could: 1. see *people were "engaged"* (compared to "classic approach"); witness 2. *"Everybody (emphasized) participated actively*" in the roundtables [design tool]; 3. everybody *"listened"* (emphasized) to the other roundtables when they spoke about what they had worked on in their group. **"Templates", "Big formats", "Flipcharts", "Post-its"** **Meetings that are "choreographed", thus intensely prepared:** - The "full choreography"/"preparation" (2): *"the full choreography of the meeting, "what kind of exercise, who does what and when. They also had prepared a lot of templates in big formats so that people could write on it and then you put them on the flipchart. [material does not just make policy tangible enough but also must be able to be used and be engaging] Yes. All the different materials to make this lab work."* **-** Design practitioner/facilitator suggests outcomes and policy learnings with "templates" that are filled;" flipcharts"; "post-its" - Premade templates to fill *" helped [...] to steer the work. But it's a lot of prep work that goes into that."* **"Photos", "Pictures":** - For individual contributions' synthesis and documentation, e.g. of flipcharts	

	Creating a "safe space"; **"Chatham house rule":** - Is essential to be able "to speak freely": creates a friendly atmosphere or good atmosphere by using Chatham House, i.e. all information is present as an aggregate and as a co-owned product [in the group/as participants; compare e.g. C2IV11, (ii) with no recording and (iii) small tables [comp. C1IV12] - Chatham House rules are used: "*To discuss about the problems to admit that, you have to be open and frank and you can only do that when you feel safe. Otherwise, when this appears in some official document: "Tunisia said …", you don't want to say this. You must create this space where you can be confident you can speak freely."*	
Case 2		
C2IV1	**Scoping [initial intent]**[109]	**Rapid iteration ("test and see"):** - *"I think we iterate and quickly iterate. The whole idea of agile development is not about sort of scoping it out from A to Z at the beginning. It's about testing it and seeing"*
C2IV2	**"Storytelling"** - Enables sharing intent (for further stakeholder integration) [compare C2IV21] **Situation / issue analysis**; **Stakeholder mapping**:	

[109] Scoping and the interviewee's quote on rapid iteration explain why the initial intent framing - or problem framing (in the words of C2IV10) - plays a vital role in the design process.

	- "[A]lways start thinking about these projects by mapping out the existing. And then you map out the stakeholders"; this shows "clear strategies" on "how" to "deal with the various stakeholders; and "at the same time ensures that "journey"/"what it looks like" improves **Extreme user thinking / inclusion:** - *"[H]ow to bring these people, even the ones who are at the edges. But I sometimes think in terms of getting the most value, it's usually better to have these people [the ones "at the edges"] up from the onset because there's a lot of things you learn before you go and invest so much, and money, in different things."*	
C2IV4	**"Use cases/ collection of use cases":** **-** "Use cases of digital disruption." - focused specifically on 7 different technologies that have had "most impact in society in general."; includes "drones, robotics in AI, digital, and social platforms" [=> "value at stake model] **"Crowdsourcing/very large repository of digital use cases" as departure point:** - Governments can use them [the use cases] to (i) see what a different government similar to us is doing in this area, (ii) witness if something to implement into own "digital public policy" (5-10 yrs down the road) [Note: this confirms intl governance competition and the showcasing role a jurisdiction or country has, as debated by C2IV2 or C2IV7; comp. section 4.1.1.1] - Quote by interviewee on crowdsourcing: *"It's just a way for people to see what's out there and why it's feasible for them as well. Ultimately after [Davos] we want to make it more crowd sourced and people in different governments or businesses will be able to add to the tool."*	**Ongoing iteration and feedback capture (**from end users of various kind; horizontal and vertical) **Service journeys:** - *"[...]next step is talking to some of the government fellows"/"approaching the government fellows and seeing if this tool is something that is useful for them and walking them through it [the tool]"* [journey testing]
C2IV10	**Toolkit:** – "Best practice tools for governments to be actually able to procure ethical AI" / for "commissioning and using ethical AI" / → hope is it can then "spread" **Toolkit pilot [ctd. from above]:**	**Feedback capture;** **Test idea:** - "[T]alk to boards of directors" [actor focus/relations - collect feedback or path forward based on tangible results/insight from prototype] - "[...] and test each idea and we'll create the toolkit" [toolkit as a design tool for testing]

	- Quote of hope/excitement: *"could be profoundly effective in terms of creating ethical AI around the world. That's very exciting."*	
	Workshop	**Feedback and iteration; Problem reframing**
	-Challenge statement and problem framing; all actors put ideas forward, aka shared their viewpoints: *"When I came into the workshop [implies actors gathering], I already had ideas of what I wanted to do. The first thing that we designed was that challenge, and I put some of my ideas around the room. I said to the folks, "This might not be the right way of framing the problem."*	
	"Sticky notes"	**Feedback and iteration; Problem reframing**
	- Used to correct/literally "put" additional perspectives "over" other(s') ideas and/or earlier suggestions and to make a verbal point concrete visually/visible to all and supplant the argument - *"I said to the folks: This might not be the right way of framing the problem. It might not be the right answer, so just go and put sticky notes over it." "We went through that exercise, and then we went through the blue-sky thinking exercise - with the Mandala - exercise."*	
	"Blue-sky thinking exercise" [Note: comprises a template]:	
	- " the Mandala" [Note: it's capturing opportunity fields, e.g. like future outlooks and 'what ifs']	**Vision creation**
	"Funnel [tool to help set focus/prioritize] [Note: comprises a template]:	
	- "Prioritize ideas to work on, in context of (i) mission/context of C4IR and (ii) actors/actor ecosystem [project lead + GFC]: "we tested it against 'could this be a 4IR project?" Those two dropped at the bottom, the board and the government procurement [latter 2 are scoped areas] "[...] because AI is such a huge topic. I could do everything in this." [interviewee implies necessity of setting focus]	**Prioritization**
	Pilot legislation or pilot protocols as end result:	
	- "That's [a legislative pilot] probably the end result. Although it could be some protocols." [artifact of design is legislative pilot]	

	"Narrative": - Used to make concrete/explore a future scenario/journey - Interviewee uses the narrative when *"talking to people to explain the issues around AI."* [Narratives, supplanted by use case or concrete showcasing and projects, are used to make issues tangible; narrative is also used to make tangible a value chain or journey projected in the future: -*"Being wrongly categorized [by technologies] can be fatal in this world. You don't know that you've been wrongly categorized because you don't have any option to ask the company. You don't even know that an algorithm has been run on you and you're categorized as somebody who doesn't have a Facebook page and therefore shouldn't get a loan, for example. [inclusion]"*	
C2IV7	**"Leapfrog[ging]"** e.g. through a disruptive technology, startup, or niche [extreme user] **Narratives** [to surface viewpoints/what otherwise remains unexpressed]: -*"[...] the inventors understand best what a technology can do. That doesn't mean they can explain it the best."*	**Pilot as a seed, to scale innovative practice regionally or globally:** **Innovator networks (for iteration/feedback):** - Rwanda acts as "seed" for "progressive use cases" in emerging tech regulation: for common regulations across East Africa or maybe all of Africa → Leads to: regional harmonization and roll out to other "regional blocks" (2) (e.g. drone innovators network or Unicef with vaccine delivery by drones) **Narrative pitch** (to government; for initial coalition forming): -"I[f you take this new approach, this Agile approach to regulating aviation" [you will] "expand your domestic economic base" / "track additional foreign investment" / "deliver better services to your citizens" [aka policy end user] which leads to "more rapid technological adoption." **Risk management** - "Let's run the experiment and see," "in a way that doesn't put anybody's life at risk"
C2IV11	**"Piloting and prototyping"**:	**Use of prototypes for tangibility and evidence generation:**

	-First, "helps people to visualize idea and make it concrete" [tangible]: you can have "lot of discussion" yet interpretation of these discussions is "different by different people": *"If you can **start a conversation with something tangible** then it helps the people that come to our events to put themselves in that mindset."* -The prototype makes explicit: "Where you are", i.e. sets a joint or common point of view and to *"improve from there"* [prototype as a stage gate or baseline]; - Helps to learn and hold *to understand and optimize for impact before implementation at scale* [chance for additional evidence]: *"I think a lot of ideas are emerging and then are implemented in one shot, **without fully realizing what the impact will be**."*	- Start a conversation with something tangible; make ideas explicit for joint development, i.e. prototype as a stage gate and baseline - Learn about impact prior to scaling - **Closed door meetings, Chatham house rule;** **Speak freely/in individual capacity;** **Reporting of ideas instead of quoting source:** - Forum's "community sessions" are organized "behind closed doors"; hope is threefold: 1. "[P]eople speak up more freely", "share more personal" and "more innovative" thoughts"; 2. Speak in individual capacity: speak in "private setting, out of their personal name, than out of the name of their company."; 3. In reports or -"any messaging that goes out from these meetings"- only ideas are shared with no "allocating" to individual people **Policy pilots/pilot projects that illustrate best practice in (governing) tech:** - The C4IR's (case II) approach is: Doing pilots as such (to secure business model evolution/positioning in the market) and extrapolating from pilots for entire governance frameworks; design practice is thus a way for the "Forum to position itself as leader in the space" and ""claim space before other organizations do" and to create a "group of people" that thinks about [tech domain] regulation and brings together best practices, to go beyond "just" pilots." - Pilot projects as "on the ground example" and "implementing": First time for Forum 1. to do " much more than convening people"; 2. to run "a practical case that then developed in action"; 3. Also helped recognize limitations of institution's role in intl. governance: "[the pilot project] currently became so big that we don't think the Forum is the best place to manage it, that we handed over to another agency" **"Impact stories", i.e. narratives, storytelling at impact stage [as policy output, and designed policy artifact]:** - "Impact stories " and "impactful piloting": to demonstrate projects in "little brochures" and/or on "website" as "examples where the Forum did something more on the ground" → [interviewee calls it] "impactful piloting"

C2IV21[110] ***See illustration xyz below, synthesizing the interviewee's thought process of actor interaction design.***	**"Develop", "run", "iterate", and "scale" projects** -Leapfrogging "areas of focus" and "scope for these pilot projects.": *"And the one I'm focused most heavily on right now is leapfrogging"* - Leapfrog past mistakes, learn from current developments and identify development to date **"White papers", "case studies" or "existing laws"; "living toolboxes";** - Use of existing policy outputs as design artifact; interviewee interrogates whether they are: "usable, long lasting, impactful, scalable ... thoughtful" **Journeys** - [Precision medicine project]: "Individual patient case studies" to map "user journeys" and user "impact" on an individual's life; journeys lead from "concept" to "real life application" - "Patient journey": sketches out end user interaction with the system; serves "engaging the public"; helps to think how a user "goes through the process of interacting with" [a] system [Note: in this case healthcare; precision medicine project at case II[] **"Mapping";** **Fill actor and knowledge gaps:** - *"And then I started mapping, like, every [...] other group that might be involved in that and then I work with other stakeholders to kind of get the idea and look for any, any gaps [content/knowledge gaps; own note] that were missing. Or any kind of other groups."*	**"Develop", "run", "iterate", and "scale" projects** **"Living" policy outputs (white papers, case studies, laws)**[111] **Pilots** - Enable exchange of information and overcoming bounded rationality: *"So I mean, just the **pilots** is one mechanism, that's, like, that's the testing. But at the Forum **it is the exchange of information part.** I think both are really crucial."* **Non-affected end user mapping/ peripheral mapping** **Fill actor and knowledge gaps:** -Look for further - beyond the end user - actor gaps by enlarging circle of stakeholders consulted - Fill knowledge/content gaps with the help of the former closed actor gaps; i.e. consult with summoned community to validate/or identify further gaps that are both actor and knowledge-

[110] This precision medicine project (C2IV21) and the one on aviation and autonomous airspace (C2IV7 and C2IV2) are the most advanced projects (in terms of work progress) during my data gathering at case II, C4IR.

[111] The element of using a previously finite policy instrument as a living policy output or policy prototype has become central for my main case project practice, see section 4.3., main case.

		related **Adjust for further knowledge, and thus pilot and scoping gaps; "Constantly continue to ask right questions**": - *"I would make sure I have all the right people kind of engaged and then just constantly asking the question, like, 'who's missing?', 'Are there gaps?', 'Are there things we're discovering through this process that we didn't know at the beginning where we need to add other elements?' And I think that that often happens, and then how do you build those, those elements in actually being agile and move forward?"*
C2IV13 ***Control interview NYC Policy lab***	**Inquiring into the "actual" and "lived" experiences of individuals:** - "Design in policy" or human-centered design process [regardless of level]: "what is the actual lived experience of this person", what are they "experiencing", how to design something for them "to implement" and what they "want to use"; how to enable "them" to "do their job better and [so that] they feel more satisfied and happy with the work they do" [Note: Interviewee refers to public servants that they are designing for] **Lend "agency" to the "public" and the ones policy services:** - Remind of and provide agency [to policy end users] to actually be helpful in the lives of the members of the public that they [public servants, thus policy officers or public managers] serve" **Broaden understanding of policy to policy as service delivery that delivers value "on the ground":** - Policy design process equals "service delivery - what should it "feel like?" - Design inquiry and process should follow the subsequent steps: 1. What should service delivery feel like 2. Back out to "theory of the program that causes it to be like this on the ground" 3. Start from "lived experience" and then "designed way backwards to a set of decisions or decision making tools or theories of the program and associated policies", i.e. implement the latter [2., the impact] through "field tests"; [or as I described it: through policy-as-if-implemented] 4. Evaluate "does that get the conditions on the ground that we wanted?" => *"Words still end up being the design artifact there, and then [...] those [the words] get rolled out over time."*	**Complement bounded perception of reality (directly) for content creation and (indirectly) for content decision-making:** - A *"human-centered design process can": "import a different real into the contexts in which people who have power make decisions. [...] It's really hard to not be yourself. To not make things in your mind out of the material which is in your mind. [...] those different kinds of life experiences. It's just really difficult to imagine that if you don't have to show up and sort of enact that for you."* [own comment that is public value triangle-related: value seeking imaginations of heterogenous, different life experiences" required] **"Policy as a service' or 'policy as 'service delivery':** - Policy prototyping as lived experience design and journey mapping towards enabling the ideal service from a policy under concern - Formulated policy as a tool / means to the end of serving the public

	Policy design artifact or end product for policy is formulated in words ('formulated policy') - Design artifact = "recommendations"; comes "in form of words", given "words are [remain] the artifacts of policymakers" **Journey maps/service journeys:** -"Journey maps and service journeys": act as "visual artifacts" to "try to help policymakers ("leadership") to conceive of their work also through visual artifacts" [Visuals inspire next to words] **'Productive' empathy:** - Just "empathy" is not equal to integrating lived realities and "doing something about" and thus acting upon the former; i.e. empathy is not equal to "serving vulnerable populations" : Empathy remains unproductive if it stays at the level of *feeling* [researcher emphasis] the same or feeling each other[112], as opposed to *"recognizing you have a different set of feelings than mine, and reacting to it, and finding a way to respond",* i.e. *"recognize that you have your own lived experience ... 'and then do something with that understanding [of that different lived experience; researcher emphasis]*' - *"Empathy is dangerous: it is not about me feeling you just to feel you, it's about me recognizing that you have a different set of feeling than mine, and reacting to it and finding a way to respond.- recognize that you have your own lived experience ... 'and then do something with that understanding."*	

[112] Compare with Case III, in which interviewee 1 (C3IV1) states that 'unity for the sake of unity' does not serve creating progress in policy yet constitutes an essential part in decision-making. Exact translation from German: "unity does not serve anything" (is purposeless) if it is not productive, i.e. *"if there is nothing that comes after";* or in German: *"wenn man danach nichts folgen lässt"*

C. Design practice – Principle 'Departing actor coalition'

Table C1: Five features to establishing the departing actor coalition - Quotes per partnering sector

Departing coalition	**References -** Source: Rationales 2/4 - Design facilitators at hosting institution - Mix of civil society/NGO + Corporate	
Mindset	*IV5; IV7 (NGO/Civil society)*	*IV2; IV4+ 8 (Corporate)*
1. Let's address the topic out there together, in a well-defined manner	- Addresses lack of information in particular topics: Transparency and Explainability (T&E) over data privacy (2, 3) -Very interesting to be part: in [region B] not a lot of programs like that; first one in T&E (1) (but complicated (1) [researcher`s own observation: openness on the side of the institution to try]  - [Researcher`s own observation: formation of main implementing project partners]: delegates of 2 parties met an event - 1. openness for proposals / interest in exploring on each side, particularly organization side (27) + 2. organization counts as serious actor - approved internally - started collaboration on other project first; case III followed (IV7, 14)	-Changes process of how think about regulation/new approach to public policy: problem solving oriented mindset plus cooperative way of solving issue (IV4, 16) -Evolution of technology made data protection regulation since 70s "*not enough any more*" (IV4, 21)
2. Make sure the topic is aligned with issues at heart in respective institution(s) <u>and</u> flexible to evolve	-Organization`s main goal: be part of public policy and regulatory innovation using technology such as AI in good way*; "very important for us to be involved*"  -**Not imposing own value/interest** but "*take group of possibilities and explore from there*" [researcher`s own observation: this is the opposite of majority creation]; make our partners in the call know that we are supporting them (IV7, 31)	-[We are just at the] start of the journey of **what a participatory approach looks like at scale for big companies**, depends on company whim but **going beyond CSR** for first time (IV2)
3. Ensure all coalition members are open to the different way of making and others' viewpoints throughout, to work *with* (not against) and embrace the latter	-**First confusing** because didn't understand the methodology, **but then started to have more information/ be more involved and it was easier** (7) [note: participating companies in case III reported same feeling of difficulty of understanding in the beginning, but then started doing it and enjoyed the design practice led program; this required openness, too, see 1.]	-**Policymakers meeting experts from company or other stakeholders in closed space** [researcher`s own note: establish/enable relationship and interaction] where **can work on a given issue, a very specific issue;** important to have **very focused discussion** within those safe space so can come out with **a concrete outcome** (IV4 6, 7)
4. Pool resources for the best interests of a wider pool of participants in the coalition and the affected by the	-Involve recipients of recommendation right from the start, to reach the people policy is intended for (latter a public policy challenge) (IV7, 1)	-"*Best interest policy-making*"needs [...]" **to gather evidence, resources, and experts**: technology enabled participatory practices / **pooling of resources in new**

topic		**ways (i.e. not there 20 years ago);** this behooves to articulate what bip vision can be in companies and government (IV2, 19); []IV2 references a wider socio-political trend in which design practice can emerge][113] -Different actors should run design-led programs in policy, companies "*should only be one of the actors legitimate*": companies have resources - money, human, i.e., know-how; can react quicker (17); but should be "*shared responsibility*", i.e. not all burden on companies; all stakeholders should feel able to organize and cooperate, work together [researcher's own observation: create and drive through relations] (IV4,17)
5. Provide an authentic and engaging appearance and narrative to attract the relevant partners and participants (affected)	*"It's like in product or service development: you test a product or a service with its users before rolling it out. Just that we don't test products or services, but policy."* [researcher's own description to startup participants in her lead function] *"General objective of this Policy Prototyping exercise (PP) is to test a transparency and explainability framework in order to obtain insights for public policy recommendations for regulators in [region B] and to inform the regulatory debate of these topics in [region B]."* [narrative co-implementing partners to gov partner/expanding initial coalition members] [What is policy prototyping?] ***"Regulatory***	- [Design practice as] **"*strong brands*" to present to stakeholders** as ready-made projects, which call for engagement (IV7, 1) [researcher`s own observation: design practice might trigger openness to engage, but will parties engage?]

[113] IV2 identifies a general trend towards a particular, new kind of policymaking at international level whose nature is:

1. Trend of **longtime civil society campaigning "for real world rights to be formally recognized in digital contexts"** / "participatory approaches baked into long-term policy response programs" also put pressure - reputational, fines - on businesses like social media giants

2. Trend from **high-level, civil society, most diverse nations/governments**, **reckoning citizenry as vulnerable + needing protection** from tech business models, at intersection between vulnerable users and Technology Policy

3. "Best interest policy-making" (bip) needs [...]" **to gather evidence, resources, experts**: technology enabled **participatory practices / pooling of resources in new ways (not there 20 years ago);** this behooves to articulate what bip vision can be in companies and government

=> [We are just at the] start of the journey of what participatory approach looks like at scale for big companies, depends on company whim but going beyond CSR for first time/acceptance it is not going away (8)(*): Advocate within a privatized environment for more open methods to meet business objectives 2. meet a widening demand on co-development practices with vulnerable groups of users 3. makes business sense because it's in the best interests of the end user, particularly vulnerable end users

	innovation labs, *developing and/ or testing governance frameworks - which would be a proposed law, self-regulatory approach, code of conduct, industry directives, etc.) in the fields of new and emerging technologies."* [slides by line manager to government and external audience].	

D. Case III impact - Vignette and quotes

Vignette: The productive link from individual to collective value (Own notes)

From the experiences of the participating companies when prototyping a governance framework on transparency and explainability of AI systems (T&E), several lessons learned and recommendations can be identified:

They deploy the logic of 'user experience' in their main result of my design practice, that we co-created - however without my active intervention. It seems this association takes my work and design practice back to where I came from, wanting to implement an experience view on policy from product and UX design, in which policy is - eventually - the visible interface of what roles actors in society should take on; it's like a script that guides patterned behavior of the characters. The value of my design practice was, probably, to spread the word about how we can approach a manner differently, and implement and follow up accordingly, logically, strategically and operationally. ***Through the links I have created with previously less or even unaware individuals, institutions, and players globally I could alter their perception*** *of the field of policy, and enable and empower them to see policy differently. I lived and did what my analysis and data reveals as unique to design practice: overcome bounded rationality and widen the space for both an individual's role and her options of action.*

=> After all, ideas - when made concrete - as well as their narratives might become concrete for others too. That's certainly my lesson learnt about the difference from design: making things tangible. Making them concrete. And through that, experiential. Much more than experimentation, it is the former that seems to count. Experimentation - the prototyping part - is purely the manifestation that makes the expression of [tangible] experience - bilaterally, from maker to user, from user to maker - possible in the first place.

Closing session, 31 August 2021 (1 hour) - Experience reports by project partners and participants (Own notes)

- ***[Co-implementing partner, engagement manager]: "****It was a pleasure to see your progress and evolution in the topic [...] Some companies started at zero, now they are quasi-experts based on the T&E solutions that we could see" …*

- ***[Partner in departing coalition, international organization]*** *highlights multiple times the importance of "uniting private and public sector around technology topic", as [case III project name] has done; and the complementary approach with an "entrepreneurial journey"; the program managed to "Go deep in T&E" through the specific tool of prototyping; they "want to go on collaborating with [case III]"*

- ***[Lead designer - myself]*** *is directed to the companies, telling them to stay in touch beyond the program, hoping to find out how they have driven the program learnings and activities further*
    - *I make clear that the next [design-led initiative under project] are directed around uniting better all actors who are involved in governance around tech, and find out how programs like the ones here, that they participated in the decision → This is an element they all criticized in my doctoral survey*
    - *I also highlight from the bottom of my heart that, regardless of the progress in the [case III] will forever remain the first in [region B], the first in [country], and that "we have written history together" ; and that I hope that the learnings from this program do not stay in the realms of [region B] only, but can be exported into the world*

- ***[Country government partner]***
    - *"Institutions of public policy need to do this kind of projects more"*
    - *"It was very enriching. It has created a different way of thinking and I think the authorities need to do this more. … It was very enriching."*
    - *"Eventually, stop to see the authorities as a person, a bureaucrat, who has a desk, trying to resolve with a letter, an email, but include us in the process, gives a lot of value to all of us."*
    - *"The collaboration public-private with clear rules are possible."*
    - *"Believe me, this was a very refreshing project!" …" It must be a continuing process… as privacy is indispensable in regulatory frameworks."*

- *"Stop seeing the topic of [policy area] as something we need to comply with, I think is fundamental, a change of philosophy. But seeing it in a value-add, a return, if you invest time it can have an economic return of value."→ Companies can see the value-add only if they embark on it*
- *"I hope many more institutions will do it, as it is very productive and, apart from that, satisfying."*

- ***[Main co-implementing partner]*** *highlights again: "the change of philosophy, [policy rea], yes is not just something to comply with. … But it is a lot more."*

- ***[Participant experience reports]***
  1. *It was going beyond just awareness in T&E, we were able to go a step ahead: it helped with external expertise and capacities, on data, relations with users ; the vision to design around the users -> being able to run concrete activities*
  2. *It was a very interesting program, a process of many learnings. Create awareness internally, around all stuff we knew but also now needed to pose the hard questions on. The exercises, helped "how to put it into a solution", "how do we make users know". External views helped detect how the solutions had an impact on society; the impact is not just on clients or ourselves, but also the final users, and will become the base for all our solutions."*
  3. *Thanks for your "accompaniment" in the program. We have created a prototype … it was concrete as much as we learned. We will integrate this in our future journey."*
  4. *Obtain learnings around what T&E was and what it meant to be a company that is ethical. We need to know technically and to establish metrics to know that technology is ethical. We gave up on the myth that if we are open we will lose our competitive advantage around AI models, as it is IP, etc. … [through the former] you gain trust with the user and you obtain credibility through T&E. This was revelatory." + User-centric design, 'you don't talk about tech but to users.' -> Debunk myth that the consumer won't understand*
  5. *"It was very deep, it opened the perspectives in many aspects, with regards to the literature, the concepts, - not just in general, but making it down to earth". You have given us granular information around our case, the next steps to do.*

[...] “That you made us know what all T&E comprised” -> Concreteness and overview and “supersolid tools”