Legal Design as a Thing: A Theory of Change and a Set of Methods to Craft a Human-Centered Legal System

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Introduction

Human-centered design has been a dominant innovation methodology in service industries, from medicine to insurance to finance.[1] It has now come to the legal system, together with movements related to legal technology, legal hacking, and access to justice reform, as a collective legal design movement.[2]

University labs, conferences, classes, and new job positions are oriented around "legal design"—the marriage of a human-centered design approach to the challenges and structures of the legal system.[3] This burgeoning community of people is interested in using a design approach to improve the legal system.[4] In light of this growth, the need arises for more rigor: rigor in how a design process is applied, in how design research is conducted, and in how the outcomes of this process and research are evaluated. Further discussion is needed to ground this design work, which is often creative, decentralized, and open, in an essential set of methods and instruments. These parameters can ensure honest reflection on how well the design approach can serve the legal system, improve people's access to justice, and promote innovation in this professional community.

This special issue presents pieces from lawyers, designers, technologists, scholars, and community organizers that detail what legal design is in practice. The pieces demonstrate how the craft of legal design is developing as one that combines a community-oriented co-design ethos, with a commitment to navigating the bureaucracies of the legal system to effect change, and with the integration of empirical research to evaluate whether user-centered design and policy proposals do, in fact, improve people's outcomes.

Before readers dive into this collection of cases, this introductory piece gives some initial grounding. It offers an initial legal design process, set of research methodologies and instruments, and grounding in analogous fields and literature. It also offers a wider theory of change—of how a design approach can feed into

1 Charles Owen, "Design Thinking: Notes on Its Nature and Use," *Design Research Quarterly* 1, no. 2 (2006): 16–27; Tim Brown, "Design Thinking," *Harvard Business Review* (June 2008): 85–92; Charles Owen, "Design Thinking: Driving Innovation," *BPM Strategies Magazine,* The Business Process Management Institute, September 2006; and Richard Buchanan, "Wicked Problems in Design Thinking," *Design Issues* 8, no. 2 (Spring 1992): 5–21. doi.org/10.2307/1511637.

2 Colette Brunschwig, "On Visual Law: Visual Legal Communication Practices and Their Scholarly Exploration," in *Zeichen Und Zauber Des Rechts: Festschrift Für Friedrich Lachmayer* [Signs and Magic of the Rights: Commemorative for Friedrich Lachmayer] eds. Erich Schweihofer et al. (Bern: Editions Weblaw, 2014), 899–933; Véronique Fraser and Jean-François Roberge, "Legal Design Lawyering: Rebooting Legal Business Model with Design Thinking," *Pepperdine Dispute Resolution Law Journal* 16, no. 2008 (2016): 303–16; Jamie Young, *A Virtual Day in Court: Design Thinking and Virtual Courts* (London: RSA, 2011); Victor Quintanilla, "Human-Centered Civil Justice Design," *Penn State Law Review* 121, no. 3 (2017): 745–806; and Mark Szabo, "Design Thinking in Legal Practice Management," *Design Management Review* 21, no. 3 (September 29, 2010): 44–6.

3 Margaret Hagan, "The State of Legal Design: The Big Takeaways of the Stanford Law + Design Summit," *Legal Design and Innovation,* September 25, 2017, https://medium.com/legal-design-and-innovation/the-state-of-legal-design-the-big-takeaways-of-the-stanford-law-

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improved legal services, policy-making, and civic interactions between people and government. This initial vision of a rigorous design and research methodology for the legal system is a first version; researchers and practitioners can refine it as they learn the best methods to use in specific legal contexts. As an initial architecture, it aims to open a conversation around rigorous human-centered experiments to improve the legal system. It also seeks to engender a willingness among those working on design, technology, and innovation in law to hold themselves accountable with a commitment to strong research and evaluation standards.

A Design Approach to Legal System Innovation

Legal design is a nascent movement to make the legal system work better for people.[5] It has been developed out of work in human-centered and visual design, civic technology, and participatory policy-making. It brings a lawyerly focus on abstract complexities (e.g., what rights we have, what risks we face, what rules constrain us) with a designerly focus on lived experience (how we do things, how things look and feel to us, how things serve us). Both the lawyerly focus and designerly focus share a core similarity: to strategically improve people's outcomes in a system, to solve complex problems, to be in service.

Legal design seeks the improvement of the legal system on multiple fronts: It wants to make the system more accessible to lay people who must use it to resolve problems with money, housing, and family; it has in view corporate professionals who use the system to contract, litigate, and conduct business; and it serves policy-makers and government officials who use the system to set standards, hold powerful interests accountable, and enforce compliance based on rights and obligations.

The purpose of legal design is to develop a human-centered, participatory approach to reforming the legal system—one that recognizes the importance of new technology but that does not privilege it as the main way to innovate. The approach weaves together design of documents, products, services, spaces, policies, and laws to make systemic changes that still pay close attention to front-line realities. It recognizes the value of having interdisciplinary, inclusive groups build and test new improvements to the system. Legal design draws on the creative exploration and making of design work, along with the systems thinking and analysis of legal work.

The wider theory of change for a design-driven approach to law is that cascading layers of efforts are needed for transformative impact. The entry points could be diverse and multi-channel. For example, one flow could look as follows:

design-summit-ee363b5bf109; and Nora Al Haider, "The Legal Design Summit Recap: Uncharted Territory," *Legal Design and Innovation*, January 1, 2018, https://medium.com/legal-design-and-innovation/the-legal-design-summit-recap-uncharted-territory-77d8795315cc.

4 See the Legal Design Alliance at https://www.legaldesignalliance.org/ (accessed February 20, 2020).

5 Legal Design Alliance (website), "The Legal Design Manifesto," 2018, https://www.legaldesignalliance.org/.

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1. *Broader, participatory network.* A diverse group of professionals (beyond lawyers) and the public are involved in discussions and design of how to reform the legal system, through design events.
2. *Human-centered research of needs and opportunities.* This interdisciplinary, participatory network can conduct research into what people's needs and opportunities are regarding the legal system. This research might consider justiciable events, experiential and process problems, and usability breakdowns. It also involves legal mapping, to understand the rules, policies, and legislation that define the current system and that might be levers for future interventions.
3. *Exploratory designs.* The research defines an agenda regarding new products, services, and policies that can make the legal system work better for people. Groups in university labs, public institutions, foundations, small companies, and large existing legal and professional services companies develop and test-run these new improvements, using the research to guide them. This step involves exploratory design and research. Often in legal design, these test runs mix the introduction of new frontline programs (e.g., communications, products, technology, services, and spaces) with reform of backend structures (e.g., rules, laws, regulatory structures, norms, and policies).
4. *Field pilots and evaluation.* The new interventions and policies that test well in the exploratory stage are then refined sufficiently to be piloted in the field. People's experiences and outcomes are evaluated to determine whether they increase both the level and quality of justice and the efficiency and usability of the system. Outcomes might include people's ability to resolve issues promptly, fully, and collaboratively. They also might relate to people's ability to comprehend and act in the legal system.
5. *Scale and replication.* The piloted interventions and policies that are shown through observational and controlled trials to have positive outcome are then scaled and replicated and established as the new standard for how the legal system should operate.
6. *Long-term evaluation.* In a longer timeframe, the implementations can be evaluated for larger, downstream implications. Studies can determine whether they improve rule of law, alleviate poverty, improve quality of life, improve the economy, and improve people's relationships with the justice system and with government more widely.

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This vision of legal design serves to launch new policy reforms, technology interventions, and service and visual design initiatives that can improve the legal system. Users of legal design approach should have a commitment to a participatory public involvement; dedicated focus on people's experiences and outcomes; experimentation with technology, services, visuals, and policy design; and gradual refinement of new solutions that pair creative innovation theory with evidence-based policymaking. In addition to laying out potential effects and outcomes of legal design, this theory of change provides the base architecture for methods that can be used to produce them. Each phase of legal design work entails different sets of methodologies to do rigorous, rich work. The next sections go through each phase to discuss specific methods.

Methods for Legal Design Work

The heart of legal design is the human-centered design process, which involves a basic sequence of design work.[6] It begins with a phase of seeking to understand a challenge area (or possible areas for reform) through interviews, ethnography, observations, data gathering, and exploratory workshops. The process then moves toward synthesizing specific user personas, needs statements, requirements lists, and design briefs. Brainstorming, speculative designs, collaborative co-design, and early rough prototyping follow to begin trying out new ways to resolve the defined challenge. This expansive creativity then gradually moves toward specific prototypes, which are tested for usability, experience, and feasibility. Prototypes are gradually refined toward pilots through testing and co-design, which leads toward pilots and scaled implementations.

Although the human-centered design process has grown in prominence as an innovation method, it is not often grounded in academic or rigorous methodology. Legal design, at this early stage of its development, can be more intentional about how and why it is practiced. Like many other fields that also use a design-driven approach to generate new interventions and knowledge—like social innovation, human–computer interaction, research through design, design for dignity, and participatory design—legal design can create a hybrid of methodologies that leads to practical and academic results. If the goal of legal design is to create not just new innovations, but innovations that can be piloted and can form the basis for evidence-based reforms and policymaking in the justice system, then a heightened level of attention to methodology is necessary.

6 See more detailed descriptions of this process in Brown, "Design Thinking"; Lucy Kimbell and Joe Julier, *The Social Design Methods Menu* (London: Fieldstudio, October 2012), 1–56; and Lisa Carlgren et al., "Framing Design Thinking: The Concept in Idea and Enactment," *Creativity and Innovation Management* 25, no. 1 (2016): 38–57.

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Participatory and Cross-Disciplinary Innovation Communities

At the initial stage of legal design work—of bringing a wider community into the agenda-setting, creation, and evaluation of new innovations in the justice system—the methodology centers on creating a more participatory and interdisciplinary group of stakeholders who are involved in the design process.

Methods from *participatory design* offer particularly helpful guidance in this phase.[7] This version of a design process integrates more stakeholders into decision-making roles during exploratory research and design. This integration occurs through collaborative workshops, design camps, community awards, co-design sessions, making and prioritization games, and other methods that allow for a wider variety of people to participate in design.[8] The methods are often dynamic and interactive. Participatory methods are qualitative, generative tools for research into people's needs, creating new concepts and setting the agenda.[9]

Participatory action research in law and elsewhere also puts community members at the center of new reform efforts.[10] The methods include holding concept mapping workshops to let various groups and people think through power relationships, current process, and visions of how the system could be better. Other methods include asset mapping (to identify common strengths and talents outside the formal institutions), appreciative inquiry to build a resource map of how leaders can better draw on the community, and seeing issues from a different perspective when prioritizing community resources. Fishbone diagrams, that lay out sequences of actions and people into a backbone and offshoots, reveal root causes to symptoms and surface dynamics—can be used in a group setting to understand true problems and needs, as well as to build better community relationships around common points of view.

Photovoice is a more distributed method (outside of a workshop), in which community members take photos and collect images to bring to the group to represent the challenge being discussed. These images initiate an analytic conversation about community experiences and needs.

Other work from open government, such as *participatory budgeting* and other methods, involve the citizenry in government reform and can serve as analogous inspiration for legal designers.[11] Ongoing consultations and creative interactions between elected officials, members of the public, and career government workers can cross over from formal, rigid public consultations to more collaborative, open-ended, and creative design work.[12] This outcome also motivates *open contracting*—a process that could be adapted to other government functions.[13]

7 Ezio Manzini and Francesca Rizzo, "Small Projects/Large Changes: Participatory Design as an Open Participated Process," *CoDesign* 7, no. 3–4 (2011): 199–215.

8 Elizabeth Sanders, "From User-Centered to Participatory Design Approaches," in *Design and the Social Sciences,* ed. J. Frascara (London: Taylor & Francis, 2002), 1–8.

9 Veronica Donoso et al., *Increasing User Empowerment Through Participatory and Co-Design Methodologies* (Brussels: EMSOC, 2014); and Clay Spinuzzi, "The Methodology of Participatory Design," *Technical Communication* 52, no. 2 (2005): 163–74.

10 Emily Houh and Kristin Kalsen, "It's Critical: Legal Participatory Action Research," *Michigan Journal of Race & Law* 19, no. 2 (2014): 287–347.

11 Anirudh Dinesh, "Participatory Budgeting and Civic Innovation in the Digital Age," GovLab Blog, March 15, 2016, http://thegovlab.org/participatory-budgeting-and-civic-innovation-in-the-digital-age-2/; and Sónia Gonçalves, "The Effects of Participatory Budgeting on Municipal Expenditures and Infant Mortality in Brazil," *World Development* 53 (2014): 94–110.

12 Julie Simon et al., *NESTA Digital Democracy: The Tools Transforming Political Engagement* (London: NESTA, 2017).

13 Open Contracting Partnership, *Open Contracting: A Guide for Practitioners By Practitioners* (Washington, DC: Open Contracting Partnership, 2013).

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The burgeoning movement in open government and participatory social services, along with *policy labs and living labs,* provides a rich array of tested methods that legal designers can borrow when expanding the stakeholders included in justice reform.[14] These labs have developed models to combine more interdisciplinary professional teams and to tackle challenges using hybrid methodologies that cross traditional barriers. The policy labs' ways of structuring innovation teams, of consulting with the public, and of shepherding creative work from exploration to pilot all can serve as blueprints for legal design work.[15]

Human-Centered Research into Legal Needs and Opportunities

In the second phase of legal design work, which involves understanding what a human-centered agenda of legal reform should be, the methodologies focus more on uncovering needs and prioritizing opportunities.

The literature focusing on *legal needs surveys* describes a more quantitative approach to integrate into this understanding of needs.[16] These surveys begin to categorize areas of justiciable events that people have and to offer some understanding of patterns, clusters, and people's behavior in response to these legal problems. They reveal large-scale trends that can guide more micro-level design research.

Research methods focusing on large-scale trends and particular user-generated content on various *Internet services*—methods that are used by those working on social innovation, political activism, and public health—can also help legal designers to better understand needs and opportunities. Methods to audit search results can be used to understand how people are interacting with legal services online.[17] Bots, crowdsourcing, and online classification tools powered by artificial intelligence (AI) also can be used by researchers to spot, count, and characterize people who are expressing needs while on social media (e.g., on Twitter, Google, and other platforms).[18]

Design research methods bring a more grounded, qualitative understanding of needs and experience. *Applied ethnography* is a primary technique used for legal design research into user needs. It entails either observations of people in legal institutions, doing legal tasks, or researchers' going through the processes themselves (either shadowing litigants or professionals, or undertaking the legal tasks themselves).[19] This technique also can involve stakeholders who do collaborative design, mapping their journey, in situ acting and improvisation of scenarios, self-recording diaries, sharing of their artifacts, and interacting with props and playful mock-ups.[20] The goal is to find people in the context of the

14 Christian Bason, "Discovering Co-Production by Design," *Public and Collaborative: Exploring the Intersection of Design, Social Innovation, and Public Policy,* eds. Ezio Manzini and Eduardo Staszowski (New York: DESIS, 2013): vii–1.

15 Christian Bason et al., "How Public Design?," in *Copenhagen Design Week 2011 Proceedings* (Copenhagen: MindLab, 2011); Lucy Kimbell, *Applying Design Approaches to Policy Making: Discovering Policy Lab* (Brighton: University of Brighton, 2015); and Mónica Edwards-Schachter et al., "Fostering Quality of Life Through Social Innovation: A Living Lab Methodology Study Case," *Review of Policy Research* 29, no. 6 (November 2012): 672–92.

16 Pascoe Pleasance et al., "Paths to Justice: A Past, Present and Future Roadmap" (London: Centre for Empirical Legal Studies, 2013); Rebecca L. Sandefur, "Accessing Justice in the Contemporary USA: Findings from the Community Needs and Services Study," American Bar Association (2014); and Peter Chapman and Alejandro Ponce, "How Do We Measure Access to Justice? A Global Survey of Legal Needs Shows the Way," *Open Society Foundations* (March 2018).

17 Ronald E. Robertson et al., "Auditing the Personalization and Composition of Politically-Related Search Engine Results Pages," in WWW '18: Proceedings of the 2018 World Wide Web Conference (New York: ACM, 2018), 955–65.

18 Eiji Aramaki et al., "Twitter Catches the Flu : Detecting Influenza Epidemics Using Twitter," *Proceedings of the 2011 Conference on Empirical Methods in Natural Language Processing* (Edinburgh: Association for Computational Linguistics, 2011): 1568–76; Patipat Susumpow et al., "Participatory Disease Detection Through Digital Volunteerism: How the Doctorme Application Aims to Capture Data for Faster Disease Detection in Thailand," in *WWW '14 Companion: Proceedings of the 23rd International Conference on World Wide Web* (New York: ACM, 2014), 663–66; and Jeremy Ginsberg et al., "Detecting Influenza Epidemics Using Search Engine Query Data," *Nature* 457, no. 7232 (2009): 1012–14.

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system who are trying to use the system through its technologies, rules, interfaces, language, and services and then to gather information from them by triggering a reflective process that can expose what their deeper needs and aspirations are. The ethnographic techniques bring thick, rich descriptions of how people currently are trying to use the legal system (or to serve others in the system) and of the possible hooks or policy changes that are called for.[21] They can produce coded interview notes, journey maps of individual users, swimlane diagrams that map out multiple stakeholders' experiences, lists of user requirements, annotated system maps prioritizing stakeholders and problems, and other artifacts to capture the status quo.[22]

Grounded theory offers a related method for collecting a variety of interviews, observations, and other data points, and using them to synthesize common patterns and themes.[23] The grounded theory qualitative approach to social science considers phenomena as perpetually changing—and it works to uncover what these conditions are, how people respond to them, and the consequences of this action. Its methodologies involve wide data collection—from interviews, observations, and secondary accounts—and then gradual development of codes, categories, relationships, and themes in this data. Insights and hypotheses are derived from a sample of on-the-ground conditions and experiences, so that the researcher (or legal designer) is grounded in these human realities when proposing what the status quo of the legal system is, the main categories of people involved, and potential next steps.[24]

A more structured, quantitative form of user need scouting can be borrowed from futurist and forecast studies, which use the *Delphi method* to source an agenda from multiple leaders. The Delphi technique involves having multiple experts react to a prompt, to forecast what they predict will happen in the future and to offer a vision for what should happen.[25] It has been used in health care for participatory agenda-setting and to structure group communication around how to solve a complex problem.[26] This forecasting method can be adapted to a wider group of stakeholders (not only legal experts) to solicit visions from more people about where they would spend resources to improve the legal system—for example, by ranking needs and opportunities and by participating in fictional games that would allocate funds to the stakeholders.[27]

Methods for Creating Exploratory Designs

In moving from the understanding of needs to the creation of new ideas and prototypes for improvement, the methodologies involve more creative, speculative, and building-focused work.

19 Margaret D. Hagan, "A Human-Centered Design Approach to Access Justice: Generating New Prototypes and Hypotheses for Intervention to Make Courts User-Friendly," *Indiana Journal of Law and Social Equality* 6, no. 2 (2018): 199–239; and Indi Young, *Mental Models Aligning Design Strategy with Human Behavior* (San Francisco, CA: Rosenfeld Media, 2008).

20 Salu Ylirisku and Jacob Buur, *Designing with Video* (New York: Springer, 2009); and Jacob Buur and Larisa Sitorus, "Ethnography as Design Provocation," in *Ethnographic Praxis in Industry Conference Proceedings* (Portland: American Anthropological Association, 2007), 146–57.

21 Corina Sas et al., "Generating Implications for Design Through Design Research," *Proceedings of the 32nd Annual ACM Conference on Human Factors in Computing Systems (CHI '14)* (New York: ACM, 2014), 1971–80.

22 Margaret Hagan, *Law By Design* (Stanford: Legal Design Lab, 2016) at http://www.lawbydesign.co/en/home/ (accessed February 20, 2020).

23 Juliet Corbin and Anselm Strauss, "Grounded Theory Research," *Qualitative Sociology* 13, no. 1 (1990): 3–21.

24 Shamal Faily and Ivan Flechais, "Persona Cases: A Technique for Grounding Personas," *CHI '11 Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (New York: ACM, 2011), 2267–70.

25 Felicity Hasson and Sinead Keeney, "Enhancing Rigour in the Delphi Technique Research," *Technological Forecasting and Social Change* 78, no. 9 (2011): 1695–1704; and Jari Kaivo-oja et al., "The Crowdsourcing Delphi: Combining the Delphi Methodology and Crowdsourcing Techniques," in *The XXIV ISPIM Conference – Innovating in Global Markets: Challenges for Sustainable Growth* (Helsinki: ISPIM, 2013), 1–18.

26 Amber Fletcher and Gregory Marchildon, "Using the Delphi Method for Qualitative, Participatory Action Research in Health Leadership," *International Journal of Qualitative Methods* 13, no. 1 (2014): 1–18.

27 Guillermo Aldunate et al., "Doing User Research in the Courts on the Future of Access to Justice," *Legal Design and*

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The *Research Through Design* community in human-computer interaction (HCI) has established a set of grounded methodologies to create early-stage prototypes as a means to inquire into user needs and contexts.[28] Design researchers approach complex, wicked problem areas—with many different stakeholders and competing priorities—using methods that involve building new artifacts, testing them, and collaborative iteration to revise them, and through this process developing stronger theories, hypotheses, and visions of change.[29] These efforts often are long-term research projects, involving repeated investigations and multiple rounds of creation, theory-creation, and re-creation of new interventions. The design team creates testable hypotheses about how to address the defined challenge by creating early prototypes, testing them, and then revising their hypothesis and their prototype accordingly.[30]

Creating these new exploratory designs involves a wide variety of practical design methods for brainstorming, prototyping, and running early-stage testing or collaborative design reviews. *Human-centered design* toolkits offer concrete methods for running brainstorming sessions, including creative matrices, analogous research, improvisation and bodystorming, interdisciplinary brainstorms, and crowdsourced open innovation competitions.[31] *Service design* methods are of particular use in legal design, to research people's needs and system dynamics and to transform the research into new ways to provide services through technology, organizational changes, policies, visuals, and other coordinated interventions.[32] These research activities involve brainstorming to create early prototypes, like storyboards, proposed blueprints, sketches of new ideas and products, acting out new experiences and interactions, and hacking current spaces with quick new visions of what could be different.[33]

In legal design, the typical product or service design prototypes also expand to include *Policy Prototyping,* as has been established in other public service innovation methodologies.[34] This approach involves taking the sketching, building, and improvisation of more traditional early-stage prototyping to a more complex, system-level experiment on how things can be changed. A policy prototype in public service innovation involves creating visual, service, and product prototypes—in addition to prototypes of new policies—to run a series of small experiments to test what behaviors, risks, and other unexpected outcomes emerge from these changes.[35] This nascent expansion of design methods into policy-making can be used by legal designers to conduct more exploratory, pre-pilot work in how court rules, legislation, regulation, and other policies can be reformed.

Innovation, July 5, 2018, https://medium.com/legal-design-and-innovation/doing-user-research-in-the-courts-on-the-future-of-access-to-justice-cb7a75dc3a4b (accessed on February 20, 2020).

28 John Zimmerman et al., "An Analysis and Critique of Research Through Design: Towards a Formalization of a Research Approach," *Conference on Designing Interactive Systems* (Aarhus: ACM, 2010), 310–19.

29 John Zimmerman et al., "Research Through Design as a Method for Interaction Design Research in HCI," *CHI '07: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (New York: ACM, 2007), 493–502.

30 David V. Keyson and Miguel Bruns Alonso, "Empirical Research Through Design," *Proceedings of the 3rd Conference of the International Association of Societies of Design Research (IASDR'09): Rigor and Relevance in Design* (Seoul, Korea: IASDR, 2009), 4548–57.

31 Luma Institute, *Innovating for People: Handbook of Human-Centered Design Methods* (Pittsburgh, PA: Luma, 2012); CoLab, *Follow the Rabbit: A Field Guide to Systemic Design* (Toronto: Ryerson, 2016); and Ursula Davies and Kelly Wilson, *Design Methods for Developing Services* (London: Colaborativismo, 2013).

32 Marc Stickdorn et al., *This Is Service Design Doing* (San Francisco: O'Reilly, 2017).

33 Kimbell and Julier, "Social Design," 45–50.

34 Lucy Kimbell and Jocelyn Bailey, "Prototyping and the New Spirit of Policy-Making," *CoDesign* 13, no. 3 (July 3, 2017): 214–26; Verena Kontschieder, "Prototyping in Policy—What For?!," *Legal Design and Innovation,* October 16, 2018, https://medium.com/legal-design-and-innovation/prototyping-in-policy-what-for-c7c567d922ec (accessed February 20, 2020); and Lorenzo Allio, *Design Thinking for Public Service Excellence* (Singapore: UNDP, 2014).

35 Margaret Hagan, "Quick Takes on How to Bring Prototyping into Policy-Making," *Legal Design and Innovation,* November 15, 2018, https://medium.com/legal-design-and-innovation/quick-takes-on-how-to-bring-prototyping-into-policy-making-cc720f306d93 (accessed February 20, 2020).

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Co-design supplements these generative methods by prioritizing the inclusion of a wide group of stakeholders in the brainstorming and prototyping.[36] It offers methods to expand these creative activities to more amateur community members or system leaders (who typically do not think of themselves as creative).[37] Co-design often happens in workshops in which experienced designers and developers are paired with amateur ones, but with everyone sketching, discussing, and building together. The more skilled designers and developers then begin to translate the group's vision into a refined exploratory design.[38]

The strand of methodologies around *speculative design* offers ways to explore possible interventions that may not yet be feasible, but that can help stretch the community's vision, challenge their biases, and think in longer timelines. Rather than aiming at immediate practicality (solving the problem right now), this branch of design methods encourages the generation of knowledge through the design of new interventions that are provocative, that can elicit reactions to help the design team better understand what the limits of a design space are.[39] Speculative design, sometimes called *provotyping* (rather than prototyping, for its provocative nature), is then used to have a critical conversation or co-design workshop.[40] Stakeholders thus engage with a challenging vision of what could be, and the design team can push the vision of interventions to be more ambitious, to think beyond immediate realities, and to also see what the boundaries of acceptable new interventions would be.[41]

Design pattern libraries also are a useful tool and methodology during the creation phase of legal design work. Numerous design patterns already have been proposed around specific legal objectives—particularly regarding communication of complex information via contracts, policy statements, and terms of service.[42] The pattern library is a means to facilitate the creation of new interventions based on previous vetted practices and to jumpstart effective design work. The patterns are most common in visual communication and interaction designs, although legal design also might work to expand the design pattern method into other systemic areas, to capture best practices and standard forms of service and policy innovation.

Early Evaluation of New Designs

As many concepts and prototypes emerge from the creative phase, the next set of methodologies get early, meaningful evaluation of which designs should advance to pilot. Feedback clarifies how to make them more engaging and usable, what risks and ethical concerns might emerge out of them, and how they can be refined

36 Jakob Trischler et al., "The Value of Codesign: The Effect of Customer Involvement in Service Design Teams," *Journal of Service Research* 21, no. 1 (2018): 75–100; and Sofia Hussain et al., "Participatory Design with Marginalized People in Developing Countries: Challenges and Opportunities Experienced in a Field Study in Cambodia," *International Journal of Design* 6, no. 2 (2012): 91–109.

37 Donoso et al., *Increasing User Empowerment*.

38 André Liem and Elizabeth B.N. Sanders, "The Impact of Human-Centred Design Workshops in Strategic Design Projects," in *Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)* 6776 (Berlin: LNCS, 2011): 110–19.

39 Elizabeth B.N. Sanders, "Perspectives on Participation in Design," in *Wer Gestaltet Die Gestaltung? Praxis, Theorie Und Geschichte Des Partizipatorischen Designs* [Who Designs the Design? Practice, Theory, and History of Participatory Design] (Berlin: Transcript, 2008), 61–74.

40 Laurens Boer and Jared Donovan, "Provotypes for Participatory Innovation," in *DIS '12: Proceedings of the Designing Interactive Systems Conference* (New York: ACM Press, 2012), 388.

41 Buur and Sitorious, "Ethnography as Design Provocation."

42 Florian Schaub et al., "A Design Space for Effective Privacy Notices," in *Eleventh Symposium on Usable Privacy and Security* (SOUPS 2015) (Berkeley: USENIX Association, 2015), 1–17; Helena Haapio and Margaret Hagan, "Design Patterns for Contracts," *Internationales Rechtsinformatik Symposion IRIS* [International Legal Informatics Symposium] (Vienna: Weblaw, 2016): 381–88; and Helena Haapio et al., "Legal Design Patterns for Privacy," in *Data Protection/LegalTech: Proceedings of the 21st International Legal Informatics Symposium IRIS,* ed. Erich Schweighofer (Vienna: Weblaw, 2018), 445–50.

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before being "hardened" into pilots. The methods of evaluation at this stage vary depending on the type of legal "thing" being designed. Is the intervention a new communication, product, service, organization, or policy, for example? Specific instruments can be used to evaluate these different types of prototypes, although common themes cross all areas of early-stage legal design work.

For all legal design work, the *usability* of a new innovation is a central criterion. Other public service innovation design methodologies have been developed to evaluate new communications, technology, and services based on system usability.[43] Standard surveys are available to measure system usability; they include fewer than 10 survey questions to reliably elicit feedback from possible users of a new prototype about whether the thing makes the system more or less usable for them.[44] These usability surveys also can begin to measure whether stakeholders' experience and confidence with the new prototype will be positive. Usability studies look at ease of learning a new intervention, efficiency of using it, and the speed and accuracy in performing tasks with it.[45] Beyond usability, other government technology researchers also have developed research methods to gauge technology acceptance, motivational models to gauge people's motivation for using new interventions, and other measures to determine how to roll out new interventions that will affect whether and how people use them.[46]

Procedural justice is another area for legal design evaluation. Even if a prototype makes the legal system more usable, does it also improve people's sense of being treated with respect and dignity within the system? Does it improve their sense of confidence in their ability to interact with the government, and their sense of faith in the government's effectiveness and rule of law? Procedural justice instruments, developed primarily in relation to police–citizen relationships, can be useful to legal designers.[47] They are short surveys that ask respondents about their relationship with a government institution and can be adapted to evaluate a proposed new intervention: Would this new thing improve or exacerbate the procedural justice factors?[48]

Related to the justice measures are methods to measure *Design for Dignity.* These instruments, mainly taken from the study of health care (particularly end-of-life palliative care), measure indicators of people's experiences, confidence, and perceived control in a system.[49] Dignity often is measured using the concept of "perceived control," in which users' experience measures are not only about happiness and satisfaction, but also about their sense of being treated with care, their knowledge of the complicated system, and their confidence that they have quality choices and

43 Zhao Huang and Laurence Brooks, "Usability Evaluation and Redesign of E-Government: Users' Centred Approach," in *Recent Advances in Computer Science and Information Engineering: Lecture Notes in Electrical Engineering,* eds. Z. Qian et al. (Berlin: Springer, 2012): 615–25; Lili Wang et al., "Evaluating Web-Based e-Government Services with a Citizen-Centric Approach," in *38th Hawaii International Conference on System Sciences* (Big Island, HI: IEEE, 2005): 1–10; and Cora Sio Kuan Lai and Guilherme Pires, "Testing of a Model Evaluating E-Government Portal Acceptance and Satisfaction," *The Electronic Journal of Information Systems Evaluation* 13, no. 1 (2010): 35–46.

44 Aaron Bangor et al., "An Empirical Evaluation of the System Usability Scale," *International Journal of Human–Computer Interaction* 24, no. 6 (July 2008): 574–94.

45 Hyewon Suh et al., "Developing and Validating the User Burden Scale," in *CHI '16: Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems* (New York: ACM, 2016), 3988–99.

46 Ben-Tzion Karsh, "Beyond Usability: Designing Effective Technology Implementation Systems to Promote Patient Safety," in *Quality and Safety in Health Care* (Madison, WI: BMJ Publishing Group, October 2004), 388–94.

47 Jason Sunshine and Tom R. Tyler, "The Role of Procedural Justice and Legitimacy in Shaping Public Support for Policing," *Law & Society Review* 37, no. 3 (September 1, 2003): 513–48; Tom R. Tyler, "Procedural Justice and the Courts," *Court Review: The Journal of the American Judges Association* 44, no. 1/2 (2007): 26–31; Roger K. Warren, "Public Trust and Procedural Justice," *Court Review* (Fall 2000): 12–16; Steve Leben, "Procedural-Fairness Movement Comes of Age," *Trends in State Courts* (Williamsburgh, National Center for State Courts, 2014), 59–62; and Margaret Hagan and Miso Kim, "Design for Dignity and Procedural Justice," in *AFHE 2017: Advances in Affective and Pleasurable Design,* eds. W. Chung et al. (Berlin: Springer, 2018):135–45.

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an ability to act.[50] Researchers studying technology use among vulnerable populations, like the homeless and refugees, have also developed methods to evaluate dignity-related outcomes when testing new interventions.[51]

In addition to quantitative feedback surveys, more qualitative, interactive, and generative *open-ended design testing sessions* can let design teams gather stakeholders' reactions, observe their interactions with the prototype, and elicit new re-designs from them. The testing sessions become more like a workshop, in which respondents can sketch changes, interpret the prototype to work in the ideal way for them, and improvise how they would use the thing in practice. Open-ended testing sessions are less about getting a definitive evaluation of a project's value, and more about leading to a next version of the prototype, with a gradual refinement of the hypotheses and details of the intervention. These sessions also can take place in context—where the design team places the prototype in the field to observe whether people notice it, engage with it, know how to use it, and to see how they interact with it.[52]

Lab testing of more discrete new interventions—such as new legal documents, technologies, or visuals—also can be useful to rank different versions of a new prototype and to refine a vision of the details and composition that must engage and inform stakeholders. Especially with legal design work, where many interventions involve making complex and intimidating things more approachable and actionable, lab tests can help design teams identify what patterns, interactions, and communication techniques are most promising. Lab evaluations simulate how a person might encounter a new legal communication or product; have the person try to use this prototype; and then have them recount their experience, rank the prototype on a number of predefined factors, and propose iterations to refine it.[53] If the legal design work is a new *visual communication,* then standard instruments can be used to empirically measure the prototype in terms of its ability to "perform" for users. Measurements can include speed of comprehension, accuracy of comprehension, and positive user experience.[54]

If the prototype is more of a *civic technology or service,* some outcome measurements from an early field run might also include the number of people who engage with the technology, those who return to it, and those who recommend it to others.[55] Other possible measurements in the short term—to show the performance of the technology—include the number of bugs, breakdowns, or levels of attrition.

48 Tom R. Tyler, "What Is Procedural Justice?: Criteria Used By Citizens to Assess the Fairness of Legal Procedures," *Law & Society Review* 22, no. 1 (1988): 103–36.

49 Mariska G. Vlug et al., "The Development of an Instrument to Measure Factors That Influence Self-Perceived Dignity," *Journal of Palliative Medicine* 14, no. 5 (May 2011): 578–86.

50 Beth Arburn Davis, "Development and Validation of a Scale of Perceived Control Across Multiple Domains," (PhD diss., Philadelphia College of Osteopathic Medicine, 2004).

51 Christopher A. Le Dantec and W. Keith Edwards, "Designs on Dignity: Perceptions of Technology on the Homeless," in *CHI '08 Proceedings: Design in Dignity* (New York: ACM, 2008), 627–36; and Asam Almohamed and Dhaval Vyas, "Designing for the Marginalized: A Step Towards Understanding the Lives of Refugees and Asylum Seekers," in *DIS 2016 Companion: Proceedings of the 2016 ACM Conference on Designing Interactive Systems* (New York: ACM, 2016), 165–68.

52 Bilge Mutlu and Jodi Forlizzi, "Robots in Organizations: The Role of Workflow, Social, and Environmental Factors in Human-Robot Interaction," in *Human-Robot Interaction (HRI), 2008 3rd ACM/IEEE International Conference On Human–Robot Interaction* (New York: ACM, 2008), 287–94.

53 Kleimann Communication Group, *Know Before You Owe: Evolution of the Integrated TILA–RESPA Disclosures* (Rockville, MD: Consumer Financial Protection Bureau, 2012); Pedro Giovanni Leon-Najera, "Privacy Notice and Choice in Practice," (PhD diss., Carnegie Mellon University, 2014); Stefania Passera, "Enhancing Contract Usability and User Experience Through Visualization: An Experimental Evaluation," *16th International Conference on Information Visualization* (Washington, DC: IEEE Computer Society, 2012); Aleecia M. McDonald et al., "A Comparative Study of Online Privacy Policies and Formats," in *International Symposium on Privacy Enhancing Technologies Symposium,* eds. Ian Goldberg and Mikhail J. Athallah (Berlin: Springer, 2009): 37–55; Omri

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More work needs to be done in the legal design community to produce a standard set of metrics around early-stage legal design prototypes. The instruments used to assess the different visual, technological, service, organizational, spatial, or policy designs might differ, depending on these different forms. Still, a consistent set of factors could be prioritized. A draft of these legal design testing metrics might include the following features:

1. *Usability*: Does the thing improve people's ability to use the legal system, and their sense of a positive experience while doing so?
2. *Procedural justice*: Does it enhance users' sense of procedural justice—that the legal system is fair, transparent, and "for them"?
3. *Engagement*: Does the thing affect people's willingness to engage with legal tasks—to use the legal system to resolve problems and to do the tasks within the system?
4. *Legal capability*: Does the thing improve people's ability to efficiently, sufficiently understand the complex legal information needed to deal with the system? Does the thing help them to figure out how the law applies to their specific situation, and enable them to make an informed, actionable decision?
5. *Resolution*: Does the thing help people to resolve a problem, to protect their interests, and to achieve a positive outcome for themselves (and those around them)?
6. *Administrative burden*: Does the thing significantly reduce the amount of time and money that people must spend to complete the tasks in the legal procedure and get to a resolution?

Building a Stronger Methodology for a Full Cycle of Legal Design

The methodology of legal design can draw from a variety of social science, design, and computer science fields to create new strategies for reform, as well as to measure and evaluate new interventions before scaling them and advocating for widespread policy change. These literatures include HCI, research through design, applied ethnography, procedural justice, open innovation, and agile governance.

The pieces that follow in this volume give more examples of how legal design is being made into a coherent discipline, and how it is being brought into the reform of court systems, data protection policy-making, community justice, housing rights, and beyond. As

Ben-Shahar and Adam Chilton, "Simplification of Privacy Disclosures: An Experimental Test," *The Journal of Legal Studies* 45, no. 2 (2016): S41–67.

54 Stefania Passera, "Flowcharts, Swimlanes, and Timelines: Alternatives to Prose in Communicating Legal–Bureaucratic Instructions to Civil Servants," *Journal of Business and Technical Communication* 32, no. 2 (2018): 229–72.

55 Knight Foundation, "Assessing Civic Tech: Case Studies and Resources for Tracking Outcomes," March 2015, at www.networkimpact.org.

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further work is done to bring a design approach into the various areas of law, communities need a sustained effort to refine methods for later in the cycle, as well as to better evaluate and supplement the methods listed here.

Past the exploratory part of the design work, when prototypes harden into pilots, more work is needed to identify methods that can take the creative, experimental design approach into the stricter, more controlled field trials. A crucial missing part of many legal design efforts currently is the pre-trial and pre-pilot field testing. In this phase of going from lab tests to field tests, there is a need for "soft trial" tests which involve actual human behavior, but which do not lock the solution into a final version. After this field run, then traditional social science evaluations using observational trials and randomized controlled trials can be used to determine how the interventions perform. As empirical legal studies as a field grows, and as more trials occur in the legal system, legal design can become integrated in this work and better create and vet new interventions to be piloted. Legal design thus can generate knowledge about what things can best improve people's outcomes and experiences in the legal system.[56]

Legal design also can become integrated into the field of behavioral science. As behavioral labs experiment with nudges and heuristics to see how small interventions can drive better, evidence-based policymaking, legal design can borrow their methods and integrate them into their exploratory design work, as well as their lab and field evaluations.[57] When legal design focuses on getting to widespread influence, then literature on innovation diffusion, borrowed from management science and health care, can provide methodologies for understanding both strategies and evaluations for scaling and replicating new interventions.[58]

In future research, legal design practitioners and researchers must also define what long term indicators of their work's impact might be, and use participatory processes to do so. Some indicators could be around people's quality of life after having a legal problem, including their poverty levels, community health, levels of violence, faith in the government, mental health, stability of housing, payment of taxes, children's attendance of schools, economic productivity, and willingness to use the courts and other legal services. Greater methodological work on long-term justice outcomes can help tie legal design work into policy-making and anti-poverty efforts beyond the justice system that can demonstrate a wider purpose of legal innovation for society.

56 D. James Greiner and Andrea Matthews, "Randomized Control Trials in the United States Legal Profession," *Annual Review of Law and Social Science* 12, no. 1 (February 2, 2016): 295–312.

57 Richard H. Thaler and Will Tucker, "Smarter Information, Smarter Consumers," *Harvard Business Review* 91, no. 1 (2013): 44–54; and Alexandra Fiorillo et al., *Applying Behavioral Economics to Improve Microsavings Outcomes* (Cambridge, MA: ideas42, 2014).

58 James W. Dearing and Jeffrey G. Cox, "Diffusion of Innovations Theory, Principles, and Practice," *Health Affairs* 37, no. 2 (February 5, 2018): 183–90; and Karsh, "Beyond Usability."

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