

PROCESS BRIEF

Getting the Most Out of SDG Data Investments: *A Living Manual for Increasing Value by Focusing on Decision Needs and Portfolio Function*

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In March 2016 SDSN TReNDS commissioned CIESIN, at the Columbia University in New York City, to undertake a piece of applied research, looking at how to design fit-for purpose data systems, which would result in more impactful policy design. The project proved particularly challenging. This process briefing summarizes some of the challenges and key learning from that project, as well as lessons for future research and data-system design. The full Living Manual is available online at <http://unsdsn.org/resources/publications/living-manual/>.

TR**NDS**

Thematic Research Network
on Data and Statistics

PROJECT CONCEPT

DEFINING IDEAS

The right high-functioning data system can upend the way a policymaker approaches a decision for sustainable development. When it comes to data system design, the options — and costs — for decision makers are constantly increasing. What is needed is a useful, and user-friendly, set of criteria to help prioritize investments of financial and human resources in data systems. Designing a fit-for-purpose data system, tailored to the actual decisions needed for development may deliver the most value for policy makers. Doing so should result in better, more actionable data and better, more impactful policies. This is of particular importance with pervasive budget constraints for SDG work overall, and SDG data specifically.

Proposed project design

The Living Manual would synthesize emerging best practices at the edge of information science, data technology, decision science, and development planning. It was intended to work with and ultimately benefit ‘data architects’ who design the infrastructures and use cases behind data systems. It had three component parts, intended to help users:

1. characterize the demand for information, including creating inventories of investment and policy decisions in the medium terms;
2. build an effective portfolio of data collection approaches in use by data architects, including forecasts and new technologies;
3. create an integrated implementation environment, to maximize value and opportunity.

“By considering data investment choices from the additional perspective of enabling effective decision-making, countries can increase the likelihood that they will choose and implement the most effective actions for achieving the SDGs.”

To ensure the end product was relevant for users, the team behind the Living Manual would collaborate with pilot case studies to field-test their ideas. This would make it possible to iterate versions of the Living Manual rapidly, in a co-creation process. Instead of shooting to deliver a final product, the team intended to produce a final first version of the Manual that would grow over time, as more practitioners submitted their work as case studies to share widely with others.

Desired outcomes from the Living Manual

- Explore how more efficient data systems could improve monitoring and delivery of the SDGs,
- Understand how data collection and use influences policy decisions, and visa versa,
- Create data-system design criteria responsive to real-world constraints and needs,
- Deliver a guide for ‘data-decision-infrastructure and architecture’ that transcends any given use case,
- Create a true living document: a multi-purpose, multi-audience guide that can be reactive, and adaptive, to new examples.

CHALLENGES TO THE RESEARCH DESIGN AND INQUIRY

The research plan for the Living Manual began by working with a selection of data architects, already known to the Principle Investigator, on a review of data systems and designs. In analyzing these data systems the Investigator hoped to identify good practices in decision-making relating to:

- Incorporating new technologies or approaches into existing data systems;
- Utilizing a portfolio of data collection approaches, rather than a single method;
- Conducting cost-benefit analyses of updates to data systems, which ensure updates support data-based policy and decision-making;
- Designing data systems that are explicitly linked to policy and programming decisions, in support of sustainable development (and more specifically, the SDGs).

This initial analysis formed the theoretical base for the Living Manual team, who then sought to identify new cases and to tease out best practices that would hold up in many countries and contexts.

In many instances, the team's assumptions about the ability or willingness of data architects to talk about their work in decision-oriented ways was severely tested. The team found that many interviewees in test cases did not approach decisions on their data systems in the same way. Few used a consistent approach to cost-benefit analysis and/or had an explicit focus on the SDGs. There were few, if any examples, where interviewees paid careful attention to the needs of decision makers and proactively considered portfolio rather than one-off approaches and were doing so in the name of SDG monitoring. Data architects and decision makers tended to rely on a status quo approach not because they were ignorant of alternatives, but instead because costing and precedent for alternate approaches or new technologies were not widely available. It was rare that the team documented any decision-based design that reflected a "bang-for-buck" or evidence-driven approach. In the end, a sizeable amount of the test cases the team reviewed were not applicable to the model of decision-making the Living Manual hoped to capture, analyze, and promote.

The team found that in many cases, users arrived at their data technology portfolios through intuition and experimentation. This made synthesizing insights — particularly in a way that would be easy for others to emulate reliably, across varied contexts — quite difficult.

Test cases did not fit with the research design of the Manual not because they lacked merit, but because they were highly context specific and could not be generalized to other contexts. The most interesting and innovative data products were designed directly for their context and for a specific issue or question. Translating lessons from those experiences to a broader audience proved more difficult than anticipated. Although there were data architects in the test cases focusing on decision needs within narrow sectors, there were no frameworks for thinking about deriving decision needs from the SDGs as a whole, or how data systems could support such decisions. The principal investigator summarized; "it was difficult to extrapolate decision-driven models where there was no model for the decisions."

One particular challenge was the assumption that even though interviewees came from varied kinds of institutions and geographic areas, they would still be prepared to describe their work in the same general way. The research team hoped to facilitate an exercise in multiple places and get sufficiently similar responses to compare and evaluate for a best practice recommendation. They prepared a facilitated exercise to make the framework's theoretical framework operate in a non-theoretical way, across a diverse set of cases. In one early interview, however, the team met with stakeholders who were highly data-fluent and thus grasped the overall concepts of decision-driven data design, even if they hadn't considered of their work in those terms. Still, the stakeholders struggled with an exercise where the research team asked them to identify concrete examples of decisions which would shape whether or not the SDGs were achieved in their region. This early interview illustrated that traditional inquiry methods to test the Living Manual framework would not be effective.

LESSONS FROM IMPLEMENTATION

The production of the Living Manual generated lessons that may be relevant to other ambitious data projects for sustainable development.

Grand ideas, even if they broach complex topics, must be sufficiently easy to understand and explain to laypersons. In the course of the project it became clear that many of the critical stakeholders in the Living Manual's production, notably guest authors and key informants, did not fully understand the ideas being proposed by the Principle Investigator. Even if most people understood what the Living Manual intended to do, there was not one clear, coherent, easily communicated vision of how the different components of the Living Manual would fit together into a coherent and useful document. The goals and deliverables of the project shifted repeatedly as a result. This was compounded by the intention that the document would be iterative and responsive to new cases; as test cases did not meet the assumptions and expectations of the inquiry itself, a coherent final version that met its purpose was difficult to deliver.

A specific target audience is a necessary creative constraint, especially in user-oriented products.

The Living Manual struggled in part because its audience was too broad, with no specific policy and/or decision-making audience in mind. As a result, it was difficult to extrapolate transferable lessons across groups. Different decision-makers have highly varied levels of control over prioritization of policies and investments, and thus highly varied priorities and capacities to act on the components of the Living Manual. If a project is more user-specific from the outset, it can still speak to other potential users. It will, however, benefit from the constraints when it comes to ensuring a certain level of experiential comparability.

Targets, not indicators, can be highlighted when discussing decision-driven systems. The SDG indicator set is large and at times daunting. Launching a full SDG data roadmap (whereby countries align their national monitoring indicators with the set of 230+ official SDG indicators) requires considerable time and capacity. While useful for national monitoring, this process does not give guidance for implementers tasked with achieving the SDGs. It can be helpful instead to discuss decisions at the level of targets. Looking at the specific SDG target that a given priority policy or investment is meant to address can allow

stakeholders to ask: What are we actually trying to achieve? What decisions will help us achieve it, and what do we need to know to in order to decide? Because the SDGs are closely interwoven, it is likely that what is needed for one decision can also be useful for another. It may be easier to arrive at the Living Manual's portfolio-based approach to evaluating decisions and the data needed to make them together by focusing on targets.

Evaluating the feasibility of research: internal lessons. TRenDS chose this project based on the potential for transformative outcomes, incorporating cues from somewhat softer decision sciences into the hard world of data science. Shortly into the project, it became clear that the sheer volume of cases needed to achieve its intended purpose outnumbered both the cases immediately available to the team and the team's ability to process and evaluate them. The scope and ambition of the project were far greater than the financial resources allotted in the grant or the time resources outlined in the proposal. The workability of the concept would have benefited from more scrutiny from the outset or from an amended scope early on in the project's implementation.

FUTURE RESEARCH

The final iteration of Living Manual is available online. While the final version does not "do" what the original concept intended, it does deliver points for consideration for policymakers or data managers. It offers advice for data-oriented decision-making on SDG themes. Furthermore, useful cases studies demonstrate how different actors are approaching aspects of decision-driven SDG systems, even if they do not perfectly come together into a single coherent framework.

Still, the fact remains that there is a clear demand for some product like the Living Manual among the data architect interviewees the research team met with over the course of their work. Particularly in environments where technical capacity and financial resources are low, there is a demand for tools that provide clear cut-and-dry pathways for decision makers. New technologies for data processing are constantly evolving, and aligning existing data

systems to the SDGs can be a tricky process. There is a definite market for easy-to-follow guides that simplify the complexity of data decisions being made by data architects, for use by policy-makers. Interviewees were keen on the ideas of providing guidance on essential data for overarching decisions, how to conduct data-system cost-benefit analyses, and how to design SDG-aligned portfolio data approaches.

Moving forward, it is recommended that a team of experts, drawn from multiple policy areas, each developing the kinds of innovations recommended in the Living Manual, work together to synthesize insights applicable to the SDGs as a whole, using simple language. Such experts could be drawn from the areas mentioned in the Living Manual — health, transportation, population, agriculture, and poverty reduction. They should work together to form a credible product focused exclusively on the challenge of communicating critical new innovations in data approaches and their relevance to the SDGs.