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Constellations

a delivery framework for the SDGs

**“Constellations are federated partnership programmes.
Inspired by the web; based on evidence.”**

Briefing: UN Partnerships

2018-05

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Overview

How might we harness the web of data to create 10x impact?

We believe it is cheaper, faster and easier to try to get to 10x impact than an incremental, expensive and long journey to a 10% improvement.



Against the backdrop of the UN Sustainable Development Goals (SDGs), communities and governments across the world need to rapidly scale local solutions to address global challenges. The web has unlocked vast innovation, connecting billions of people and millions of organisations. It is the most effective informational architecture in history, yet we are still in the early years of harnessing it.

We are at a junction point where we must balance the utility of the web with material ethical questions around data usage: governments are both opening up access to data and taking steps to assert new social rights; commercial innovations are continuing - at pace - to bring new services to market; communities have greater access to information that can hold governments accountable. We know we are poor at learning from history, but we also simply do not know how, or if, 'old' models will translate into a future where seven billion people are online.

Social literacy around the potential of data is lacking and, while governments, NGOs and companies are launching ambitious programmes, there is a deep disconnect between the pace of innovation and policy. Our challenge is to harness the collective intelligence of the crowd and machines and to encourage rapid development of solutions to specific challenges while maintaining strong governance.



Not only are new digital tools emerging that can better meet people's needs, these tools are directly accessible to only a few. Digital divides and lack of digital infrastructure continue to maintain and increase inequity. However, this is not about a 'technology will save us' approach, it is explicitly about applying the design principles of what's worked to further enable access to the expertise, frameworks and tools that can enable federated collaboration among local communities globally.

In parallel we face challenges at an unprecedented scale, from scaling global agriculture and renewable energy, from climate change to poverty. The Sustainable Development Goals present a tremendous opportunity to raise a clear mission statement on critical issues.



We ask, how might we better harness the human and machine capital at our disposal to address them? How might we use data as an operational asset enabling peer learning, creating a culture which encourages risk while rapidly developing policy to balance risk, learning through iterative application, constructing sustainable use-cases underpinned by a strong data infrastructure and standards that apply to both humans and machines?

Our questions take technology out of the lab, and through the corporate firewall, by asking how might we solve specific challenges within a limited time box.

We draw our learnings from highly successful, impact-focussed projects. To help initiate discussion we combine a series of concepts, define common language and describe practical examples.

Context

How we frame our thinking and language helps us address how to bring together financial, human and machine resources.

Data Infrastructure

As we digitise our society there is substantial scope, if not an operational mandate, to systematise elements of data capture while benefiting from radical (in orders-of-magnitude) cost reduction in data storage, management and utilisation.



We believe the framing of data as 'the new oil' is unhelpful. Instead, data and in particular *networked* data, is as much part of our contemporary lives as roads, electricity and water. We suggest there is a need for countries to create a National Data Infrastructure, for cities to create City Data Infrastructure, for sectors to create sector-based Data Infrastructure.



“Data increases in value the more it is connected”

Instead, framing as infrastructure, we can draw the comparison:

- Our physical infrastructure enables our physical economy (e.g. roads)
- Our digital infrastructure enables our digital economy (e.g. broadband)
- Our data infrastructure enables our knowledge economy (e.g. the web)



We attribute economic value to data flow rather than as a capital asset. Data and code should be treated as a marginal cost with specific investments into insight and action. Economic sustainability is based on liquidity and, in the digital age, to increase flow is to increase both data supply and demand, and to minimise friction in such flow.



Network Thinking



Akin to design thinking, network thinking is a design pattern of the twenty first century. To draw a simple analogy, when asked a question today we first reach for search engines or wikipedia: we have internalised and assumed that there is a globally connected, federated network upon which we can draw (the web) which contains a sum of human knowledge. Yet much of this knowledge is not addressable. For example, the existence of proprietary or confidential data is unknown: we don't know if what we need is already known, we don't know how to find and gain access to it.

Network thinking foregrounds this fact into our design process, and applies its logic to both humans and machines. How might we design for globally connected, federated skills; open up access to greater information; increase the speed and veracity of such access; ensure that this is for everyone?

Delivery components

To move at pace, we must combine diverse functions and roles

Culture



Culture change emerges through shared stories. Creating compelling, human stories that help people understand what happened, how they can engage and what the benefits are for them is often overlooked or underestimated as a critical deliverable. Describing what an openAPI is brings no direct benefit; enabling someone to get a bank loan as a result of one helps build engagement.

"We need cultural innovation more than technical innovation"

For example, it is worth asking what cultural interventions and stories may have helped a GDPR-like¹ outcome within a few years instead of its introduction over 20 years after the need for such a response became clear. **The consequences of delaying a robust and structured data ethics model has had substantial impacts on a global geopolitical scale.**



When we look to the (near or long-term) future, how will we engage in an informed public dialogue around the impacts of technology? Ranging from data and artificial intelligence to quantum computing, we need to address the social contracts between state, industry and citizen.

Often overlooked in government and social impact projects, and across the NGO community, we propose that a strong communications focus and function is included from the outset.



Communication is an ongoing activity, not an action that happens at the 'end' of a project. Data-driven stories can help engage people in the process of development and generate better outcomes. We need to ask, at the outset, what the practical benefits and material risks are, and how to interpret and engage with them on a cultural level.

Making

Rather than discuss 'innovation' as a specific task, we propose building on the learning of the entrepreneurial and maker communities. **It is often the case that solutions are locked inside organisations without any route to market.**

"Shorten the path between policy and innovation"



Joining together the explicit innovators (e.g. startups, incubators, accelerators) with implicit innovation (e.g. practitioners on the ground, end-users) and policy function can help shorten the path between innovation and policy. Policy knowledge is a vital input and source in requirements writing, with practitioners bringing process knowledge to bear on the challenges and how to deliver political change.

1 [EU General Data Protection Regulation](#)

Policy & Governance

Balancing an open society with public security presents continuous challenges. Both institutions and organisations face an increasing challenge of balancing top-down leadership with emergent collaborative initiatives.

**“Much as we need socially robust science,
we need socially robust technology”**

The elements described herein should be embodied in the development of a National Data Infrastructure Strategy. Policy interventions need to underpin data infrastructure, address definition and application of licensing, and reset the cultural norm from ‘closed by default’ to ‘collaboration by default’.

To build for resilience and adaptation we need to ensure policies that support federated knowledge are created and maintained: there are new roles to create in our digital administration. These can combine human and machine processes in monitoring, auditing and enforcement.

Learning & sharing

We need to build institutional capacity and provide opportunities for learning and career development, support skills development, enabling new roles to be defined and grown as work is completed.



Learning should embrace failure and analyse the creation of sustainable financial, human and technical models. A structured, federated learning practice to share knowledge uses data as an operational asset, making learning routine and embedded in personal development.

“Learn by making and make learning routine”

 We draw from military and medical environments, who are among those having the most rigorous and formalised systematised learning practices. We can harness the technologies which are already at our disposal to create cost-effective, usable systems that

“Defence is a ‘learning organisation’ where knowledge and experience are accessible, and passing on learning becomes routine”

We explore how to enable federated knowledge sharing through both human-led (e.g. training trainers) and machine-led (e.g. online learning) to enable people to discover, adapt, develop and share their own versions of what works.

Open Standards

In a similar manner to communications, standards must be considered as living and evolving, addressing human- and machine-needs, and their intersection. As we increasingly codify policy into distributed systems, the adaptation path between policy and standards will increase in pace.

“Create living Open Standards that are adaptive to rapidly changing needs and capabilities”

To create living Open Standards requires the active participation of those it affects: creating multidisciplinary groups that directly involve its users is critical. Investment in standards that are usable and that reduce friction will help enable initiatives to repeat and scale.

Data Infrastructure



Networked data is part of our infrastructure. For the purposes of our discussion the software that consumes and produces it, whether algorithmic, based on machine learning or artificial intelligence, distributed ledgers, or simply data linked via URLs, is part of our data infrastructure.

“Design for open; build for search”

We must include in our scope the notion of networked access. In the language of the web, this is the definition of open APIs. Open APIs can enable both access to permissioned, private data and access to open data.

The methodology of the data shared through the APIs must be rigorously documented to ensure that those represented within data are protected and data not misappropriated or used out of context. There are substantial challenges around data being used out of context away from the hands of those with an ethical understanding and professional connection to the data and its source: we help build human and machine systems to manage this.

For example, the Open Banking Standard (not UK regulation) creates a clear and enforceable mandate to open up both product and personal data while addressing and balancing state, commercial, and individual needs.

Culture

Inspiring stories
Engaging communication
Peer, press and public comms

Policy

Governance
Policy and regulatory opportunities
Economic & legal frameworks

Making

Startups
Competitions
Evidence

Learning

User needs
Training needs
Business needs

Infrastructure

Open APIs
Algorithms
Data

Standards

Human & machine processes
Repeatability
Ethics & security

Design principles

Our guiding principles aim to frame and catalyze action

Designing for a 10x ROI can range from budget (10x improvement for same budget), time (10x faster), efficiency (10x reduction in waste) or scale (10x more people/issues impacted). The guiding principles for our design are to:

1. Frame 10x challenges
2. Articulate the vision, pick the challenge, set the date
3. Focus on the user-needs of those impacted
4. Embed open communication from the outset
5. Design for open; build for search
6. Enable reciprocity: stimulate demand, not just supply
7. Incentivize data flow by increasing data liquidity
8. Build unexpectedly diverse teams
9. Define short deadlines to create a halting condition and pre-authorise permission to iterate
10. Be porous: actively facilitate multiple-organisation collaboration and sharing
11. Pre-authorise permission through clear and open licensing
12. Embed data ethics in economic and social contracts

Examples

In the UK, 150 experts convened to create the Open Banking Standard. As individuals they represented incumbent and challenger banks, consumer rights, startups, businesses, regulators, policy makers, trade associations and Treasury. The output of a three month intensive programme was a top-level document that addressed parameters ranging from liability to data protection. All outputs were openly licensed and a mandate set to openly license future outputs to enable reuse. The outcome is that (a) the UK has now regulated the standard, (b) a \$15M/y trust oversees implementation and (c) countries around the world are copying and repurposing the standard for their own usage.

More recently the EU's leading climate change innovation fund, Climate KIC, convened 30 industry experts from diverse organisations to explore the basis of an Open Environmental Risk Standard, with the explicit aims of creating a 10x improvement, reducing duplication and increasing data sharing as an enabling outcome.

Starting point

Writing the script that will create impact

Inspired by the web, Dgen creates federated partnership programmes that turn social, environmental and economic impact into business as usual. Based on evidence, we help deploy capital, humans and machines to address today's challenges at scale.

If you would like to explore the creation of a Constellation to address a specific, time-limited challenge, we propose a two day workshop with a diverse set of 20-30 leaders and challengers.

The outputs are to:

1. Define specific outcomes and impacts
2. Map existing and new challenges
3. Map existing and new stakeholders
4. Define funding requirements and governance
5. Set deadlines

There are many organisations that can help you achieve these outcomes, the Dgen Constellation is one which actively seeks to create federated teams as part of its design phase.

For example, we could begin by exploring what the UN has accomplished around open data recently and map these against specific, repeatable outcomes. Building on what worked, we would seek to anchor around a specific challenge, identify new partners and funding, and engage in the development of the full suite of Delivery Components at-scale.

Contributors

Gavin Starks, Founder, Dgen



On behalf of HM Treasury, Gavin co-chaired the development of the UK Open Banking Standard, leading banks, trade associations, startups, regulators and consumer rights organisations to lay the foundations for new regulation.

He has worked with public and private sector organisations internationally, with Ministers, C-suite leaders and startup founders.

He was the founding CEO of the Open Data Institute. Under his leadership, it unlocked over \$100M of direct economic impact, incubated over 50 companies, launched franchises across 20 countries, trained 6,000 people, recruited a world-class board and team, and grew its turnover to \$7M/y in under three years. He sat on the GLA Smart London and the Ministry of Justice Data Science and Evidence boards and provided evidence to a Parliamentary Select Committee on 'Big Data'. As a serial entrepreneur he has focussed on creating economic, environmental and social impact. His work has led to recognition as one of the most influential people in data, awards for innovation and expertise, and frequent international presentations on innovation, the web of data and its impact on society.

Cynthia Rudge, Director, Open Banking North America, Dgen

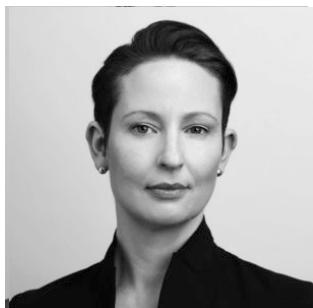


Cynthia has 30 years of corporate, consulting and entrepreneurial experience. After studying Economics at McGill University, she embarked on a 15-year career in Financial Services, working at Richardson Securities, Merrill Lynch and finally Wood Gundy, subsequently acquired by CIBC, where she was a Vice President & Director and member of the Operating Committee. Business areas that she has been involved in include government finance, private client and wealth management, and institutional equity. She has worked in executive positions including finance, strategy, and global technology project leadership.

In consulting roles, Cynthia has been a director of capital markets boutique Oliver Wyman, and has on her own as well as with other partners overseen highly data-driven projects for organizations such as the Toronto Stock Exchange and TD Investment Banking, and supported strategy development for the Board of pension plan HOOPP.

Since 2000, she has been involved in a range of digital technologies initiatives including think-tank the Digital Alliance for Converging Technologies, and in clean technology companies and projects with activities including venture and private equity fund raising, market development and M&A. Arenas where she has conducted business include North America, the UK and Europe, Australia, India and China. More recently, her interest in the digital transformation occurring in Banking and Financial Services has led her to join Dgen as Constellation Director of Open Banking Canada.

Bianca Wylie, Public Sector Technology Policy



Bianca has designed, developed, and run public consultation processes for all levels of Canadian government and has extensive experience at the city level.

She has worked on a range of policy topics, including: transportation, environmental assessments, open data, urban planning, social service provision, libraries, parks and public realm, and real estate development. She has expertise in creating programs that enable a broad set of stakeholders to participate in open, defensible, and effective joint decision-making.

In 2017 she was part of a task force coordinated by the University of Toronto's School of Public Policy and Governance to improve municipal governance for the City of Toronto, providing advice on data and digital. She sat on the advisory committee for the Ontario International Open Data Charter Working Group and the selection committee for the federal Treasury Board's civil society network, part of its open government plan.

Bianca currently sits on the Toronto Public Library's Innovation Council. She works with the Institute of Public Administration of Canada on events to support learning on technology policy within government. She is a guest lecturer at the Schulich Centre for Executive Education, teaching a course on open government. She is also a columnist and speaker on issues relating to civic technology, digital governance, and smart cities.

Celeste Connors



Celeste has twenty years of experience working at the intersection of economic, environment, energy, and international development policy. She served as the Director for Environment and Climate Change at the National Security Council and National Economic Council in the White House where she helped shape the Administration's climate and energy policies.

Prior to joining the White House, Celeste served as a diplomat in Saudi Arabia, Greece, and Germany. She also held positions at the U.S. Mission to the UN, served as the Climate and Energy Advisor to the Under Secretary for Democracy and Global Affairs at the U.S. Department of State, and worked for City of New York.

She is faculty at the Johns Hopkins University School of Advanced International Studies (SAIS) in the Energy, Resources and Environment Program. She holds an MSc in Development Studies from the University of London's School of Oriental and African Studies (SOAS) and a BA in International Relations from Tufts University. Celeste is a Term Member on the Council on Foreign Relations, member of Global Island Partnership (GLISPA) Steering Committee, and serves on the board of America's Service Commission.

"Closed systems will not persist"

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