Nesta...

INNOVATION FOR INTERNATIONAL DEVELOPMENT

NAVIGATING THE PATHS AND PITFALLS

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April 2016

Acknowledgements

We would like to thank all of the contributing authors for taking the time out of their busy schedules to craft such thoughtful and insightful essays, and for working with us in so collaborative a fashion during the writing of this book. We are especially grateful to them all for sharing their achievements and their challenges in such an open and lucid way, and for the much-needed practical advice they offer for the benefit of those embarking on their own journeys in innovation for international development.

Thanks also to all those experts who participated in early brainstorms, shared ideas or commented on early drafts including: **Michael Carnahan**, **Dan Honig**, **Paul Skidmore**, **Kippy Joseph**, **Jill Boezwinkle**, **Duc Tran** and **Anja-Nadine Konig**.

At Nesta, thanks firstly to **Irina Ulcica**, who provided excellent and essential research and editorial support during her internship. Thanks also to **Giulio Quaggiotto** and **Geoff Mulgan** for advice and feedback throughout, and to **Helen Durham** and **Sally Stott** for their support in the production process.

About Nesta

Nesta is an innovation foundation with a mission to help people and organisations bring great ideas to life.

We are dedicated to supporting ideas that can help improve all our lives, with activities ranging from early-stage investment to in-depth research and practical programmes.

INNOVATION FOR INTERNATIONAL DEVELOPMENT

NAVIGATING THE PATHS AND PITFALLS

Foreword

At its core, innovation is about doing business differently – even when that business is innovation. *Innovation for International Development* is an excellent inventory of new approaches and perspectives from across the sector that will help to change how innovation is thought about, designed, and delivered for achieving impact goals. Innovation alone will not solve all of the problems facing humanity, but we certainly won't solve many without it.

I read these exciting essays with great interest because innovation has always been at the heart of how The Rockefeller Foundation solves complex problems and brings about great transformations. At the time of our founding in 1913, our predecessors called it scientific philanthropy, but it was really defining innovation: testing different solutions, taking risks with unproven ideas, and scaling what works.

Our more than 100 years of experience in applying innovation to global development has taught us that we must foster innovation to adapt to new learning and changing context. In the early 20th century this meant mostly backing brains – identifying who the innovators were and then mobilizing the right resources to enable their creativity and allow their ideas to flourish. Later it meant also focusing on innovations to create movements that would lead to transformational change, like the Green

Revolution which fed more than one billion people around the world. Today, innovation is now also about looking everywhere for new ideas and new voices. Technology has enabled us to do this more effectively, allowing us to better 'search and scan' for the challenges and promising solutions on the horizon, as well as sense for new ideas through open source competitions and crowdsourcing.

Because our world is operating at such a fast pace of change, we no longer have the freedom to let innovation take a long, winding course. Rather, we have to make hard judgments and smart bets with imperfect information. We need to creatively leverage strategic partnerships to drive breakthrough change systemically and sustainably.

None of this easy. It takes patience, flexibility, and investment.

In our line of work, we cannot accept innovation for innovation's sake. Rather we must pursue innovation with intention and in service to ever-greater impact. The ideas in these essays – and the people and organisations who contributed them – will help lead the way.

Judith Rodin, President, Rockefeller Foundation,
18 April 2016

Searching for the state of the art

Once more, with feeling?

"With the right investments and policies, we can be the first generation that ends poverty..." declared UN Secretary General Ban Ki Moon at the pivotal Addis Ababa development financing conference in 2015. This bold statement may seem entirely appropriate in the year that the international development community approved an ambitious new set of targets for achieving global development goals. The optimism is contagious, but it is far from new.

From the Brandt Commission of the 1980s to the Pearson Commission of the 1960s, from John F Kennedy's inaugural address in 1961 to Harry Truman's infamous launch of the development agenda in 1949, the history of development is strewn with claims that each generation is uniquely positioned to solve the problems of global poverty and inequality.[1] Despite many laudable achievements – from the eradication of smallpox in the 1970s to more recent reductions in child mortality and poverty[2] - this tendency to claim that success is around the corner might be one of the reasons why international development has a reputation for over-promising and under-delivering.

In reality, despite the availability of ideas, new technologies, funding, and even political will, the sheer complexity of improving the lives of the poorest and most vulnerable people in the world means such bold ambitions have remained out of reach.[3]

The burning platform

For some, this has led to a degree of cynicism about the industry and its methods.[4] Critiques have stoked negative public opinion about aid spending in times of austerity, and led to calls for greater scrutiny and pressure to demonstrate better results. In addition, a growing cast of new actors challenging established institutional models, and a range of new financial commitments[5] means that international development organisations are more open than ever to trying new ways of solving the problems faced by the world's most poor and vulnerable populations.

These dynamics have led to an explosion of new initiatives for innovation in and for international development: from new funds and capacity building initiatives, to novel policies and partnerships, these efforts are found in every area from long-term national economic development to short-term, life-saving humanitarian assistance.

Our focus and scope

As they gather pace and mature, we have sought in this book to draw together the lessons learned by policymakers, practitioners and researchers at the frontline of designing and implementing these 'innovation for development' initiatives.

Our aim is not to expound what could work in theory, but rather to delve into the hard-won lessons of those who have tried to support innovation in practice. The focus is on creating a

resource for those people within donor agencies, foundations, international bodies, non-governmental organisations (NGOs), and businesses who want to design, implement and manage their own innovation efforts, and want to draw on the best available insights and ideas for their work. While our focus is unashamedly practical, we also hope this volume will be of use to those who study and analyse innovation, setting out new directions and gaps for empirical investigation.

Importantly, this book doesn't aim to provide off-the-shelf solutions to supporting innovation in international development. Instead we hope to offer inspiration on what to try and what to avoid, to trigger new ways of working, as well as share practical lessons on how to bring good ideas to life in different contexts.

Our focus in this first iteration is on efforts to support innovations that have emerged from within the international development sector, focusing on contributions from bilateral and multilateral aid agencies, non-governmental organisations and multinational companies. We recognise that this, while important, is only one part of the development innovation story. Our planned follow-up work will focus on innovation initiatives led by actors within developing countries, drawing on perspectives from governments, civil society organisations, the private sector, scientists and communities themselves. We also want to reach outside the international development sector to broaden the discussion on how to improve the relevance and impact of innovation initiatives for alleviating poverty and reducing vulnerability, to bring in influential and capable perspectives from other fields.

What we mean by innovation

When selecting contributors to include, we were careful not to interpret innovation too narrowly. As **the successful exploitation of new ideas that create value at scale**, innovation could apply to a range of products, processes, services, business models and technologies, and the value created could be commercial, public or social, or indeed combinations of all of the above. At the same time, we were cautious not to interpret innovation so broadly as to become meaningless and indistinguishable from merely 'doing things better'.

While innovation is often associated with sparks of creativity or lone geniuses, for many decades entrepreneurs, scientists, businesses and other organisations have been pursuing innovation in a deliberate and disciplined way. Too many good ideas never move beyond the drawing board because innovation is poorly managed, if at all. Getting from a good idea to a global impact is rarely a direct and linear process – instead it demands distinct phases of activity, each with different requirements in terms of skills, resources and partnerships.

Based on this understanding, we've organised this book into four themes: Part one) How to fund innovation; Part two) How to organise for innovation; Part three) How to harness new partnerships and collaborations; and Part four) How to scale innovations and transform systems.

These themes provide a framework for understanding the evolution of the innovation movement in international development and the range of new initiatives underway. Indeed, the progression in activities from funding to organising, to collaborating, to attempting to transfer systems, is one we have observed in innovation in many other sectors, as well as within Nesta's own approach to supporting innovation.

In this report:

Part one: **How to fund innovation**

The recent growth in initiatives for funding innovation in international development is remarkable: new funds, development impact bonds, challenge prizes, and advanced market commitments are spreading throughout the development system.[6] These mechanisms are shaped by ideas from both within the sector – for example the 'results agenda', which has driven calls for 'outcome-based' funding initiatives, with incentives designed around achieving and measuring specific results – as well as external influences such as venture capital and social impact investment, which emphasise the importance of new levels of flexibility and expertise in investment management.

Building on the four cases discussed in this section, new initiatives are emerging all the time. In the last few months alone, UNICEF Innovation Fund has announced a $9 million fund,[7] investing in open-source technologies for children, and the Global Innovation Fund (GIF) announced its first round of investments.[8] GIF in particular is something of a landmark. An international consortium of the UK, USA, Sweden and Australia, as well as the Omidyar Network have pledged $200 million over the next five years to support breakthrough solutions to global development challenges.

Whatever the approach, there seems to be agreement that innovation requires a qualitatively different type of funding from other activities. It requires funding methods that are more accepting of risk, more flexible to pivots in approach, more

patient for returns on investment, and which come combined with complementary resources like support, advice and training. These methods help funders to be far more adept at spotting opportunities than is possible within the constraints of a standard grant application form.

In Part one - How to fund Innovation, we gain four different perspectives on the issue:

- Dave Ferguson, Director of the Centre for Development Innovation at USAID's Global Development Lab, reveals what's been learned from one of the first and most influential efforts to apply venture capital principles to international development funding of innovation through Development Innovation Ventures.
- Sarah Dunn, former Head of Strategy at the Children's Investment Fund Foundation, looks at how a large philanthropic funder, free from the constraints of public accountability, is seeking to address gaps in innovation support for neglected development challenges.
- Steven Buchsbaum, Deputy Director, Discovery and Translational Sciences and Grand Challenges Lead at the Bill & Melinda Gates Foundation (BMGF) explains how the Grand Challenges team have tested and improved efforts to use challenges to systematically source creative ideas and scientific solutions to major unsolved problems.
- Toby Eccles, Founder of Social Finance, focuses on social impact bonds in development. A model much discussed but little tested, he describes how it works, looks at the lessons learned from practical applications and examines the model's potential to transform development efforts.

Part two: **How to organise for innovation**

The second theme builds on the premise that there are distinctive organisational capabilities and individual skillsets for innovation. Experience shows that innovation is often far more about methods and motivation than mavericks and magic. The approaches required depend a great deal on the stage of the innovation process. For example, do you want to generate new ideas and proposals and challenge the status quo, prototype and evidence the impact of new approaches, or take proven ideas to scale? It also depends on the nature of the organisation in question. Are you a new 'fleet of foot' startup or a long-established bureaucracy?

Many of the famous cases of organisations learning to innovate, and to maintain competitiveness in a fast changing market, come from large technology companies, whose daily business is, in theory, entrepreneurship and innovation. Yet even for them, changing direction, taking risks and reinventing business offers can be extremely difficult or in the well-known case of IBM, like *"an elephant learning to dance."*[9] International development organisations are tackling the challenge of organising for innovation in many ways: from UNICEF's global network of 14 innovation labs, to the central USAID Global Development Lab; from DFID's application of human-centred design expertise, through the Amplify programme, to the rigorous evaluations of Innovations for Poverty Action; or the various innovation-focused roles, R&D units and teams being created in organisations around the world.

In Part two - How to organise for innovation, rather than evangelising a particular approach, we show the scope of efforts to organise for innovation, and the processes through which organisations determine the approach that works for them.

- James Whitehead, Global Innovation Adviser at Oxfam, describes lessons learned from attempts within large NGOs to build a culture of innovation by stealth; the role of leadership; and the risk that talking openly about innovation could stifle it.
- Marpe Tanake and David Veldeman, Advisors from the Médecins Sans Frontières Sweden Innovation Unit, outline what has been learned from the range of approaches supporting innovation in humanitarian crises – from the short-term rapid responses to the long-term investments required for sustainable change.
- Ravi Gurumurthy, VP for Strategy and Innovation at the International Rescue Committee (IRC) and Jeannie Annan, Head of Research and Evaluation, share the process behind designing and implementing a new innovation strategy at the IRC – from how to ensure the right access to skills, to achieving the right balance between novelty, experimentation, evidence and the need to get the urgent job of humanitarian relief done.
- Chris Fabian, Founder of the UNICEF Innovation Unit, along with Mariana Amatullo, from Design Matters at Artcentre College of Design, share what's been learned at UNICEF during several years of efforts to build a network of capabilities for innovation, the value of guiding principles, and the pitfalls of over reliance on elite teams.

Part three: **How to harness new partnerships and collaborations**

International development has been dominated by a relatively small group of organisations for decades. Today new actors are disrupting the establishment. It's not just a question of new players with traditional models – for instance, the rise of emerging economy donors and development banks – but also the emergence of radically different business models for solving development challenges. If you were looking for the 'cutting edge' of the international development sector, you might look at Premise, an open data startup which predicted food trends in Brazil 25 days faster than the official national statistics agency. Or you might turn your attention to PetaJakarta, which is experimenting with new ways to respond to crises by harnessing human sensor networks. You might even be tempted to consider Airbnb's Disaster Response programme[10] as a sign of things to come.

Whichever the combination, from new public-private financing models, to the effective implementation of new programmes on the ground, collaboration across organisations, sectors and cultures is a fundamental requirement of innovation. And it's an endeavour with vastly underestimated challenges.

In Part three – How to harness new partnerships and collaborations, we explore the opportunities, challenges and strategies involved in collaborating on innovation from four different perspectives:

- Jonathan Wong, former Head of the Innovation Hub at DFID, now Science, Technology and Innovation Advisor to the UN, exposes the challenges of his experiences developing novel networks and partnerships with actors outside the traditional development sector – from design consultancies to multinational companies – in order to better inspire, enable, manage and scale innovation.
- Dennis Whittle and Britt Lake, Founder and Senior Director respectively of GlobalGiving, show how their organisational model is recasting the relationship between aid givers and aid recipients, cutting out the middlemen of aid agencies and challenging the basic assumptions and structures of the development industry.
- Per Heggenes CEO of IKEA Foundation and Johan Karlsson, Head of Business Development at Better Shelter provide a private sector perspective of the challenges encountered, and the depth of engagement and negotiation required to overcome them, during a collaboration with the UN High Commission on Refugees on housing for displaced communities.
- Kim Scriven and Menka Sanghvi, Manager and Innovation Management Advisor at Elrha's Humanitarian Innovation Fund, draw on experience from over 65 funded projects in international disaster response to argue for a more strategic and clear-headed approach to collaboration for innovation.

Part four: **How to scale innovations and transform systems**

Scaling innovations – achieving substantial diffusion and take-up of new ideas – more often than not requires changing the system you are working within. For example, in order for the invention of the car to transform the nature of transport, a system of complementary product and service innovations were needed, such as roads, petrol stations, driving schools, traffic management and so on. Until these were in place, cars were poorly diffused and vastly outnumbered by carriages.

Regardless of the pathway to scale, whether through replication of identical products and services or the development of new markets, innovations always have to push against a system of incumbent actors and factors that only has so much space for novelty.

This applies equally to a factory worker who has come up with a design for a new product and wants to convince colleagues that it is superior to what has gone before, or a vaccine producer who has a brilliant idea for a cheaper vaccine that can be used in developing countries to save children's lives. Achieving scale means turning one's focus from a single idea, process or product to the wider system of which it is a part.

In Part Four – How to Scale Innovation and Transform Systems, we explore this enduring challenge from different angles:

- Lauren Franzel, Senior Specialist, Policy and Market Shaping, and Alan Brooks, Director, Health Systems and Immunization Strengthening, for Gavi, the Global Vaccine Alliance, outline how achieving transformative change in vaccine delivery has demanded both a systemic approach and a focus on national ownership.
- Paul Harvey, Senior Researcher for the High Level Panel on Humanitarian Cash Transfers, talks about the growth of the simple yet effective innovation of giving disaster-affected communities money instead of goods. Despite the growing consensus on its value, he discusses why the expansion of cash transfers beyond current levels of diffusion still faces barriers and challenges.
- Aleem Walji, former Chief Innovation Advisor within the Leadership, Learning, and Innovation Vice Presidency at the World Bank, and now CEO of the Aga Khan Foundation, draws on his experiences to demonstrate how flawed thinking about scale is damaging efforts to maximise the impact of innovations in development, and looks at how to get this right.
- Ben Ramalingam, leader of the Digital and Technology research group at the Institute of Development Studies (and one of the lead authors of this publication) and Ken Banks, Founder of kiwanja.net and creator of messaging platform FrontlineSMS, critique the over-reliance on digital technologies as a development panacea and highlight the benefits and challenges of digital development as a route to innovating at scale.

Finally, in the closing essay in our collection, Geoff Mulgan, CEO of Nesta, draws together the threads. He discusses the role innovation can play in creating a development industry that is fit-for-purpose and fit-for-the-future, and demonstrates why innovation should be seen as integral to the notion of sustainable development.

The journey ahead: What's next in innovation for development?

It has become commonplace to state there is no shortage of good ideas in development. As President Bill Clinton put it: *"Nearly every problem has been solved by someone, somewhere. The challenge of the 21st century is to find out what works and scale it up."*[11]

This view has some virtues – not least because it places an emphasis on searching, testing and diffusing rather than simply duplicating efforts. However, taken too literally this can risk focusing too much attention on technical solutions, without attention to wider contexts. Good ideas don't always spread by simply being replicated – instead they adapt and evolve over time, shaped by and responding to social, political, cultural and economic systems.

This collection looks at the possibilities and limits of innovation within international development organisations.[12] It is vital these stories are told, understood, absorbed and built upon. If innovation is to play a role in 21st century approaches to development, the international development system needs to be more open, more dynamic, more questioning and more experimental.

We can see in these essays the emergence and evolution of this new system, and it gives cause for considerable optimism. The conversation about risk and results is becoming more sophisticated. More principled and contextually aware takes on supporting innovation are emerging. New actors are entering the sector from unexpected directions. More locally-owned approaches are increasingly seen as vital, not just for generating new ideas, but also for ensuring they achieve impact at scale.

We believe these efforts need to be better documented and networked, so that the collective energy leads to a tipping point in the way the sector thinks and works. Our hope is this volume provides a useful step in this direction.

Kirsten Bound and Ben Ramalingam

Part one: **How to fund innovation**

Development Innovation Ventures (DIV), USAID Global Development Lab

Lessons from one of the earliest applications of venture capital principles to international development

Social Finance

How social impact bonds work, and their potential to transform development efforts

Children's Investment Fund Foundation

How philanthropic foundations can play a role in addressing gaps in later-stage innovation support

The Bill & Melinda Gates Foundation Grand Challenges Programme

Systematically sourcing creative ideas and scientific solutions by clarifying unsolved problems, and funding solutions rather than projects

For many development innovators, just as in other sectors, identifying the right resources to support the innovation process is a fundamental challenge. Even when finance is available, it's not often clear to funders how to identify the most impactful ideas, projects and companies, and how best to support them at each stage.

In this section, we look at a range of the most influential approaches used to date, from stage-gate financing, impact bonds and grand challenges, to venture capital methods. Elsewhere there has been much discussion about the need for innovative financing vehicles to meet the shortfalls in resources required to deliver the Sustainable Development Goals. Across these articles, however, the focus is more acutely on implementation challenges – how to use both existing resources and newly dedicated funding pots to support innovation far more effectively. While each essay provides a unique set of insights, three overarching themes emerge across the group:

First, for funders seeking to achieve the biggest possible impact, **the quality of the funding is often just as important as the quantity**. There is a move from administering cash in grant and commissioning evaluations to building trust and venture partnerships – for instance, by providing advice, mentoring and access to networks, as well as fostering creativity and flexibility. This is not just at a technical challenge, but also a major cultural shift for aid organisations. USAID's efforts to design and implement an innovation funding programme that builds on venture capital principles within a traditional bureaucracy has been a remarkable learning experience and more are emerging all the time.

Second, amid all this experimentation, it is also clear that there is **no ideal way to select the best ideas to support**. This basic problem is not unique to innovation projects, but is one faced across the development sector as a whole. Although there is an increasingly sophisticated discussion about development markets, the reality is that the people who pay for most initiatives aren't the same ones that are supposed to benefit from them. This lack of market feedback limits ability to understand both the demand for and effectiveness of aid in general, and of innovations in particular. There is a range of ways these broken feedback loops can be addressed: through better evaluations and evidence, such as those methods explored by DIV; through spotting gaps in data and support as encouraged by CIFF; and through focusing on solving specific challenges such as in the case of Gates Grand Challenges.

Third, while it's easy to focus on the exciting work of seed funding new ideas and exciting concepts, most innovations take a very long time to achieve their potential value, and funders are recognising that **supporting innovation requires a rich mix of different funding strategies and approaches**. It's well known that it can take 10-20 years to get a new drug or technology to market, but social, institutional and organisational innovations take time too. In industry, the rewards for innovation are greater profits, with market mechanisms for scaling successful ideas. Commercialisation may be a route to scale for some innovations in international development, but there are many for which it isn't. Philanthropic organisations like the Children's Investment Fund Foundation have the potential to plug important gaps in the innovation funding chain – a theme also identified strongly in Omidyar Network's analysis of Frontier Markets.[13]

Reading across these contributions, it is clear that there is real potential for greater collaboration across different funding methods, and between funders to establish a coherent set of entry points and road maps that different innovations might require. This would allow the development community to more readily identify gaps in the funding landscape and fill them proactively. It would also mean that innovators would be better positioned to make good funding choices and navigate their own innovation journeys.

This article describes the lessons learned over the last six years of Development Innovation Ventures (DIV). This programme from the American Government's official aid agency, USAID set out to apply venture capital principles to development funding, and solve difficult problems more effectively and with less money.

Funding innovation for development: lessons from Development Innovation Ventures

Dave Ferguson, Director of the Centre for Development Innovation, USAID Global Development Lab.

In October 2010, USAID began an exciting experiment: to see if a new model of development, borrowing principles from venture capital, could take root within a government agency. The goal was simple: to bring in creative new ideas for solving problems facing millions around the world, and to increase the accountability of these ideas for delivering more impact, for less money, than other ways of doing development. Thus began USAID's Development Innovation Ventures (DIV).

Six years later, DIV is pursuing this mission through an open competition for ideas: anyone, anywhere in the world, at any time, can apply to DIV by submitting a five-page application. These applications can propose solutions in any sector, and in most developing countries – and over 65 per cent come from applicants new to USAID. From these applications, the DIV team carefully selects grant investments, ranging from less than $100,000 up to $15 million, for proposals with the highest potential to meet DIV's three primary pillars: cost-effectiveness, evidence of impact, and pathway to scale. Since 2010, we have invested nearly $70 million in over 145 solutions in nine sectors and 36 countries.[14] Two examples are shown in Box 1.

Box 1: **Development Innovation Ventures in Action**

Innovations for Poverty Action - Community Health Workers in Zambia		
Level of investment	**Stage**	**Country**
$99,032	Testing	Zambia

When the Government of Zambia initiated a programme to roll out Community Health Workers (CHWs) around the country, they intentionally built a number of research studies from the outset to inform how to maximise the impact of the programme as it scaled. One such study, conducted by Innovations for Poverty Action (IPA), with support from DIV, was motivated by the Zambian Government's interest in understanding the most effective ways to motivate CHWs to improve their performance and, hopefully, the health outcomes of their communities. IPA evaluated two ways to recruit CHWs for their positions: 1) using socially-focused materials emphasising the potential of CHWs in helping their communities; 2) using career-focused materials emphasising CHW as a professional opportunity.[15]

IPA found that career-focused messaging in recruitment materials attracted CHWs that were significantly more productive than CHWs recruited with socially-focused materials. The career-focused CHWs visited 29 per cent more households - which led to 31 per cent more mothers giving birth in a health facility and 20 per cent more children getting polio vaccinations – a total of 240,000 people that received care who otherwise would not have.

For no additional cost, a tweak in recruitment strategy significantly increased community health outcomes. Based on this evidence, Zambia has mainstreamed the career-focused recruitment strategy for successive cohorts of new CHWs.

Beginning in 2016, DIV will be supporting IPA at its next stage of funding to expand this research through a nationally representative household survey to understand how improved health worker productivity is affecting household health outcomes, and the extent to which the Zambian Government is retaining its highly motivated health workers.

Off-Grid Electric		
Level of investment	**Stage**	**Country**
$6.1 million	Testing to Implementation at Scale	Tanzania

Traditional rural electrification programmes have typically relied on grid extension or distribution of solar home systems and lanterns. While important, these solar systems are plagued by distribution challenges, service challenges and high upfront costs, which present a huge risk to the populations they serve. The customer can end up spending anything from one month to one year's income on a device that they are personally unable to fix.

Off Grid Electric (OGE)[16] provides affordable, reliable light and energy services (M-POWER) to low-income and rural individuals and communities by allowing customers to pre-pay for electricity in small increments via mobile banking. DIV partnered with OGE through stage 1 and stage 2 grants, enabling the company to expand capacity to reach over 100,000 additional households in Tanzania, providing light and energy services to over 500,000 people. On average, an OGE customer household saves $186 annually, in energy-related costs.

Assistance from DIV has helped to demonstrate the economic stability and scalability of OGE's approach, thereby allowing the company to access additional financing and to expand its coverage. OGE now provides its services to 10,000 new

households per month. Most recently, DIV supported OGE with a stage 3, $5 million grant to test its model at scale and catalyse additional investments to reach more than one million households.[17] Building on DIV grants, OGE has received over $60 million in external debt and equity investments, to date.

Over the past five years, DIV has vetted thousands of applications, worked with dozens of organisations, and adapted the model we apply to each. DIV tries to be non-prescriptive by design, but we have certainly learned some vital lessons along the way.

First, while we expect our grantees to produce rigorous evidence of impact, we also need to provide flexibility on what kind of evidence best fits each solution, at each stage. Second, we have learned that we need to provide more than money: technical assistance is incredibly important in helping early-stage organisations grow. Third, we have realised that we can't just talk the talk of iterative innovation; we have to walk the walk, too. DIV has internalised an adaptive philosophy, iterating our processes and approaches over time. These are important lessons from the past five years, and they are also continuous challenges that we have to work to address each day.

1. The challenge of evidence

DIV aims to raise the bar on understanding exactly how novel interventions affect outcomes, not just outputs, of beneficiaries. DIV grantees take many different approaches to determining outcomes. Almost half of DIV's grantees, for example, are using randomised control trials (RCT) that apply rigorous principles of testing to assess the innovation success of funded interventions. Other grantees are focusing their attention on key performance indicators, such as efficiency or coverage, to find ways of

enhancing products or services that already have proven impact, or to improve how quickly and cheaply they can be delivered.

One question we are faced with frequently is: what kind of evidence best fits each solution? While the randomised control trial approach may be important in many cases where an intervention is unproven, it is less useful and relevant in others; for DIV's off-grid solar grantees, for example, their ability to test different ways of providing more light, to more people, at lower prices, is more important than their ability to each, individually, prove that access to light improves lives. RCTs and operational/ 'trial-and-error' tests often serve as complementary methods to demonstrate and expand impact across our portfolio.

Another common question is: how much evidence is enough evidence? DIV's late-stage investments have often conducted the aforementioned randomised control trials in the countries in which they began their operations. As they expand into new countries and new markets, is it necessary to prove their interventions again, given that they may face cultural, operational or logistical challenges? Or, given the long duration and high costs of these trials, is it better to treat the evidence as conclusive, and invest those dollars into solving the challenges directly?

DIV increasingly emphasises improving our understanding of what types of evidence are best for the different types of solutions in our applicant pool and their expected pathway to wider dissemination. Past experience has helped us better discern where an RCT is relevant, and where we need to use quicker, more process-oriented tools like key performance indicators (KPIs) to measure the outcomes that matter most. We have also become better at understanding why different approaches to evidence are useful at different stages of a solution's long-term growth, and at assessing the evidence needed for different pathways to scale.

2. Scaling requires more than financial support

DIV's aim is that the solutions we support will have the potential to reach millions of beneficiaries in the next decade. DIV understands that some of these solutions will fail, but recognises failure as an inherent component of our approach to investment: we're willing to take risks, but our tiered, performance-based approach ensures failed ideas fail fast and cheaply. To date, DIV has seeded or been a primary supporter of over 50 solutions that have led to measurable benefits for over 100,000 people. Many other grantees are currently working to reach similar, and greater, scale.

We have learned that, while patient capital can be catalytic in a solution's long-term development, it is often necessary but not sufficient for sustainable growth. From the very beginning of the programme, DIV structured its awards in stages and typically provides funding by supporting grantees according to milestone achievements that allow flexibility to iterate. This flexibility allows grantees to test different ways of expanding the reach of the solution, but also mitigates DIV's risk and ensures continued progress as these tests are carried out.

However, we have also found that it is important to couple financing tools with additional support. Starting in 2013, the DIV team incorporated technical assistance to support the growth of solutions as part of grant oversight. This approach developed into pay-for-performance milestones that serve not only as useful evaluation tools for DIV, but also provide significant added value for grantees in thinking through their growth strategies, cost projections and evaluation approaches. Following this, DIV has developed a system that assesses each case individually, and works to identify ways in which DIV, USAID, and our partners worldwide can provide the necessary knowledge and skills support.

3. Finding 'what works' for supporting development innovation

Since our founding and first call for proposals in 2010, DIV has committed to a 'startup' style of iteration and improvement. While the DIV model of open innovation, cost-effectiveness, evidence, scale and staged financing has remained a consistent framework, DIV works to improve the operations and services behind its execution. This commitment is integrated into the team's operations: DIV holds dedicated weekly 'experiments' meetings, where it combines big picture ideas, strategic thinking, and data into efforts to improve the way DIV works.

In addition to the institutionalisation of iteration in day-to-day work, DIV has made tangible improvements to its operations over the years. As one example, DIV has reformed its application and review process several times to more quickly and accurately process the ever-multiplying number of applications to its open competition. DIV has reviewed over 7,200 applications over the past six years, with as many as 1,200 reviewed in one quarter by a team of 12. By experimenting with revisions in review procedures, DIV has developed ways to manage this high volume of interest, while significantly reducing the review time for applicants, and maintaining high standards for accuracy and quality.

On the process side, the DIV team has evolved quickly to meet a growing number of applications to the competition. Understanding the need for adaptation, DIV has moved to a rolling, year-round process, and shifted our back-end review process and investment procedures. Once proposals pass DIV's initial screening, the team works with other parts of USAID (such as its contracting office) to finalise decisions.

Here, it can be a struggle to increase speed and risk-tolerance, and minimise bureaucratic constraints. We work with organisations that need to iterate quickly to adapt to the

emerging challenges their innovative solutions face. These organisations look to DIV to provide catalytic financing to meet these challenges, particularly in the early stages of their growth. DIV has struggled to meet these rapidly changing demands and dynamic timelines in its selection process. This challenge is two-pronged: improving DIV's own techniques for fast and flexible financing; and figuring out ways to do so in an institution that primarily processes large-scale, long-term contracts. The team is continuously developing ways to improve the speed of our process in the face of these internal and external challenges.

The success of the DIV approach is perhaps best demonstrated by its influence across the sector. It has given momentum to other similar funding vehicles, and has seen its core approach and principles being widely shared. Moreover, we hope we are contributing to a new, more democratic approach to development that is more suited to the kinds of complex evolving challenges the world faces today – where potential solutions can come from anyone, anywhere in the world.

What to take away from this...

- Better evidence is critical to better innovation funding. Yet the sort of evidence that funders demand needs to be appropriate to both the nature of the solution and its likely pathway to scale. Randomised control trials may still be the gold standard for previously unproven interventions, but process-related performance indicators are more relevant to many investments.
- Patient capital is catalytic, but financing tools should be complemented with flexible and personalised technical assistance (e.g. strategy, networks, business processes and evaluation) for greatest impact.

- Fast and flexible financing is counter-cultural to organisations that primarily work through large-scale, long-term contracts. DIV had changed the system from within through constant iteration and adaptation, and its lessons have influenced the design of more recent innovation funding initiatives.

The Gates Foundation has been a driving force for the past 15 years in the way that development innovation is thought about, supported and delivered. This contribution draws out lessons from a large-scale effort to find and fund new solutions to neglected challenges: the Gates Grand Challenges Programme..

What we've learned so far from the global experiment in Grand Challenges for health and development[18]

Steve Buchsbaum, is the Deputy Director of Discovery and Translational Sciences and leads the Grand Challenges Programme at The Bill & Melinda Gates Foundation.

"We must know. We will know." This is the mathematician David Hilbert's epitaph, which captures the spirit of impatient optimism that led him over a century ago to define a set of unsolved problems, or 'Grand Challenges', to provoke and inspire the field of mathematics. Since then, many different groups have defined such challenges to focus attention and effort on specific issues. More recently, the US Government launched Grand Challenges for the 21st Century, including the BRAIN initiative[19] (Brain Research through Advancing Innovative Neurotechnologies), and DARPA launched the Robotics Challenge.[20]

In 2003, the international development world saw its own version come to the fore. The Bill & Melinda Gates Foundation launched the Grand Challenges in Global Health, followed in 2007 by Grand Challenges Explorations, as a complementary, broader and more accelerated grant-making programme.

Looking back, it seems clear that the Grand Challenges in Global Health was a watershed moment that changed the course of global health. Before 2003, there was still scepticism that world-class discovery science had a legitimate role, despite the fact that

some of the greatest scientific advances, such as vaccines, were the bulwarks of global public health. The Grand Challenges in Global Health initiative, has, perhaps more than any other single intervention, established the legitimacy, indeed the necessity, of science and innovation in global health. The Grand Challenges Explorations have now expanded this principle to the rest of international development, addressing everything from financial inclusion to energy access.

At the heart of the Grand Challenges there are three very simple ideas, set out below.

1. Systematically sourcing and harnessing creative ideas

The first is how we effectively harness a global community of innovators to create new solutions – technology innovations, as well as social and business innovations – to improve the health and accelerate the development of those most in need around the globe. We believe that the process of crafting a Challenge, which typically requires an extensive consultation with experts inside and outside the Foundation, begins a rich strategic learning process, which is uniquely enhanced by the diverse submission of ideas from innovators across the globe.

We then undergo a systematic process of calling for, examining and rewarding ideas. Our first step is to ask three questions:

1. Is the idea responsive to the Grand Challenge? Ideas can be determined to be non-responsive either because the proposed work is clearly outside the scope of the challenge or the applying institution does not meet eligibility requirements.
2. Is the proposed work on strategy for the Foundation – or for shared strategic priorities in the case of funding partnerships? Although our areas of strategic interest are set out publicly, these areas evolve in response to results of current

investments and to new information, including new directions suggested by novel approaches in applications. Most ideas are declined based on this second question.

3. If the proposed work were to be successful, would it be important and impactful? Our review process diverges from more typical scientific reviews in that we place the highest priority on potential impact as opposed to scientific novelty.

This review step is an initial filter on innovative solutions, and typically less than half of the submitted proposals move forward. We also use this opportunity to categorise the ideas submitted, which informs the next step in the review process – engaging the appropriate experts from within the Foundation and the wider community – as well as informing the direction of future work in the Foundation, including the design of new challenges.

For example, when we ran the Diagnostics Grand Challenge in 2009, which was complemented by Grand Challenges Canada's call in 2010, we received over 1,000 submissions. These submissions provided a snapshot of the current state of diagnostics in response to a specific problem statement, capturing data from academic work that had yet to be published, as well as proprietary concepts from commercial sources. Similarly, when we ran the Grand Challenges Exploration topic on reinventing the condom,[21] we were not only provided with a landscape of possible solutions, but also a map of what problems different innovators thought were the most important to solve. Collectively, this new information and perspective has shaped the Foundation's thinking in this area and guided the design of a range of planned initiatives.

The next step for Grand Challenges Exploration (GCE) is that a set of innovation reviewers, both internal and external experts, are permitted to champion individual ideas and, with very few

exceptions, we provide each of these championed proposals with a $100K seed award. After approximately a year of work facilitated by this seed award, GCE projects are eligible to request a follow-on award for up to $1 million. These follow-on GCE requests for funding are evaluated in essentially the same manner as the awards under larger Grand Challenges described below.

In contrast, the next step of the review process for full Grand Challenges applications, as well as GCE follow-on awards, is that each idea is evaluated by multiple reviewers, based on the following criteria:

1. Is the work innovative relative to existing approaches and more specifically, relative to the existing portfolio of work we are already funding?
2. Is the work scientifically feasible and is the plan to demonstrate the validity of the idea sound?
3. Is the team likely to be able to execute the project and do they bring any unique resources or collaborations that are particularly valuable for achieving the proposed goal?
4. Is the budget and timeline reasonable relative to the project complexity, risk, and potential impact?

We again bring together experts from the community as well as across the Foundation at this stage, and we are very receptive to a champion-based review permitting a single passionate reviewer to advocate that an applicant be given the opportunity to submit a full-length proposal against a consensus of reviewers who would decline the application. Similarly, for GCE follow-on awards, a single passionate champion is provided significant opportunity to champion and move an idea forward for funding. In these discussions, we seek to balance picking the best

individual proposals based on the criteria above versus building a portfolio of projects with complementary approaches. From this perspective, a key outcome of the review discussion is a set of suggestions for modifying the project sent to the teams whose application is moving forward.

For the Grand Challenge awards, the full-length proposals are subsequently reviewed by experts within and outside the foundation. Typically 25 to 50 per cent of the ideas will be funded. While this is, of course, an imperfect process, carrying the certainty that meritorious proposals will be declined at every stage, it is also the best way we have of systematically identifying and advancing ideas that can have impact, and we are continually working to strengthen and improve it.

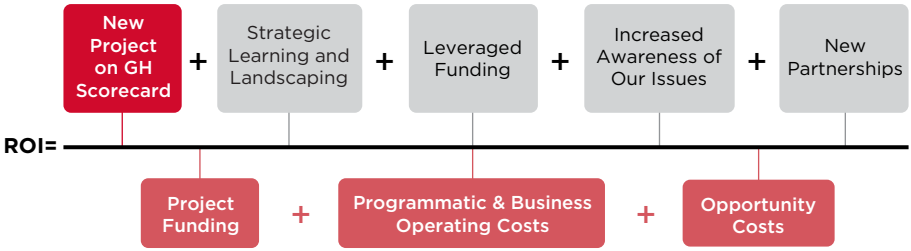
2. Measuring the impact and value of interventions

The second idea is about how we measure impact and value of our interventions. We use Grand Challenges to seek new knowledge or new concepts that will lead to interventions that would not otherwise have occurred or that would not have occurred as quickly without our investment. Inherent in this is a willingness to take risks, to make mistakes and to learn from these mistakes. In the last decade, we and our partners have run numerous challenge calls, ranging from very specific technical calls seeking new biomarkers for Tuberculosis[22] to new concepts for promoting health-seeking behaviours. Each of these varied challenge calls can be viewed as an experiment, and increasingly we aspire to evaluate these individual experiments to permit the lessons they hold be applied to and improve future challenge calls.

Given the length of time that many ideas require to demonstrate proof of concept and the subsequent barriers to achieve scale and impact, we have developed a framework to permit an intermediate evaluation of Return on Investment (ROI) for Grand

Challenges, which we hope can serve as a proxy for lives saved and lives improved. Other Grand Challenges partners have developed alternative frameworks that, like this ROI, are intended to guide their work. We describe each of the terms in the ROI below (see Figure 1).

Figure 1: **Defining Return On Investment**

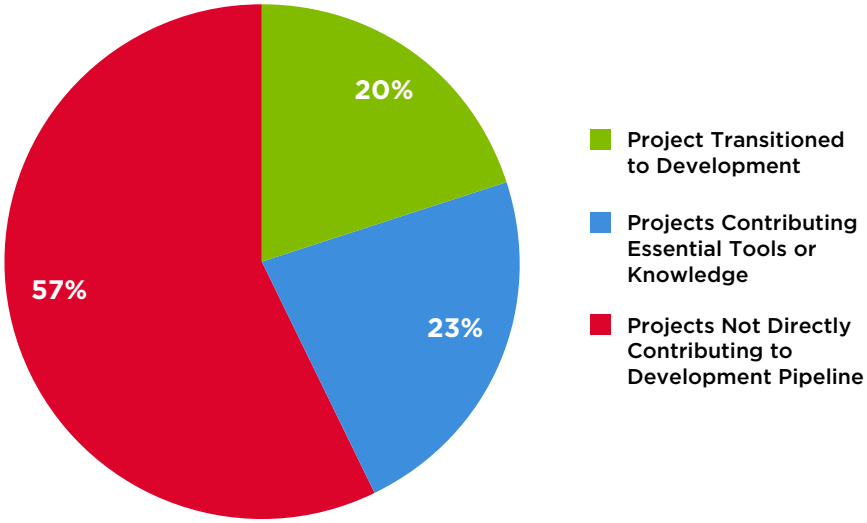


Our primary metric of success is identifying new investment opportunities that ultimately result in lives saved. As an intermediate measure we track Grand Challenge investments that have demonstrated sufficiently robust proof of concept that they have transitioned to the development stage.

For our development pipeline we aspire to select the best opportunities that have achieved proof-of-principle, independent of provenance. When proof-of-principle is demonstrated, we make the increased investments (when possible in partnership with other funders) required to take the concept forward into development. Therefore projects selected for the development pipeline provide a reasonably independent intermediate metric of success of Grand Challenge initiatives. To this end, we can view each challenge call as an independent experiment to be evaluated.

When we applied this analysis to the original Grand Challenges Global Health call that supported 44 projects in late 2014, nine were currently on a pathway towards development (**GREEN projects**, 20 per cent) and ten were contributing essential tools or knowledge to other development projects (**BLUE projects**, 23 per cent). The remaining 25 projects (**RED projects**, 57 per cent) had not, though many nonetheless made solid scientific progress.[23] (see Figure 2).

Figure 2: **Scorecard for Original GCGH Projects**[24]



An example of a **GREEN** project is the Eliminate Dengue project led by Scott O'Neil, which has developed a potentially transformative new approach to controlling the insect vector that transmits dengue. This new approach is currently being evaluated in field trials. This project also now appears to have

potential impact against the Zika virus outbreak with plans being developed for an accelerated deployment. An example of a **BLUE** project is Drugs for Treatment of Latent Tuberculosis Infection, which was led by Douglas Young of Imperial College. Although this project didn't produce the new drug candidates envisioned, it changed the scientific perspective on the pathogenesis of Tuberculosis (TB), which is no longer viewed as either active or latent, but is now understood as a disease with a wide spectrum of activity. This new knowledge, along with tools developed by the project team, is now fundamental to both drug and vaccine development efforts for TB.

Finally, **RED** projects range from a company which failed financially and was unable to complete the proposed work, to projects such as Nobel Laureate Dr. Ralph M. Steinman's Improved Vaccine Efficacy via Dendritic Cells and Flavivirus Vectors, which produced a wealth of new knowledge, but with insights that are not yet included in a specific manner in the development of a new global health intervention. It is also worth specifically calling out another group of **RED** projects – those that looked to produce needle-free, thermostable vaccines. In this case, the formulation of the challenge focused only on the scientific barriers and did not take sufficient account of the regulatory and commercial barriers; thus, although much good scientific work was accomplished, few of these projects are on a pathway towards development. In other words, what we asked scientists to do as formulated in the challenge call had substantive weaknesses, not the work that they performed in response to the call.

3. Building a global innovation marketplace

The third idea is about the need for an innovation system, or marketplace, in global health and development, and what this might look like. In the decade since the Grand Challenges kicked

off, we have made a lot of progress and learned many lessons. We believe the next major barrier to success is optimising the path to scale in a sustainable manner for thousands of innovations that have been supported at proof of concept.

Ten years ago, there was very little innovation in global health and global development. The pipeline of innovations was simply not available, a point made clearly in the 2012 Acumen-Monitor report which referred to this as the 'pioneer gap.'[25]

Today, although perhaps not widely appreciated, the world has a robust pipeline of innovations approaching proof of concept. Grand Challenge programmes at the Bill & Melinda Gates Foundation, Grand Challenges Canada, and USAID alone have supported close to 2,000 innovative concepts, many of which are working towards proof of concept. Compared to a decade ago, the challenge today is different: there is no easy or systematic path for the subset of innovations that should move forward to be able to access the attention and resources needed to achieve scale. You can think of this as an innovation 'pile up' at proof of concept.

We could view the grand challenges approach in the following way: innovation is the highway and impact is the destination. We have successfully built the first half of the highway by creating a pipeline of proof-of-concept innovations. Now we need to finish the second half by building a system that helps promising innovations move more easily to scale in a sustainable manner.

One solution to this problem could be a global innovation marketplace to accelerate the quantity and quality of innovations transitioning to scale in a sustainable manner. What might be the characteristics of such an **innovation marketplace**?

On one side of the marketplace there is a growing pipeline of innovations from Grand Challenges partners, which includes

the Bill & Melinda Gates Foundation, Grand Challenges Canada, USAID, and a growing network of countries such as Brazil, India, South Africa, Israel, Peru and others. The marketplace would aggregate this pipeline of innovations independent of the provenance of the funding source, and instead based on merit and potential impact.

On the other side of the marketplace, there is the active engagement of investors whose resources – both funding and expertise – are critical in helping the pipeline of innovations achieve scale. Some of these investors are private and some public, but all share the value that they are interested in impact first and not purely economic returns.

Between the innovations and investors, to paraphrase TS Eliot, 'falls the shadow.' We feel the critical functions that an innovation marketplace would need to link innovations to investors are **curation** and **brokering**.

A **curator** could serve several important roles:

- To make sure the innovations are investment ready. One of the things we have learned is it is difficult to truly reach proof of concept, and there is insufficient attention to entrepreneurship in this pipeline of innovations. An innovation marketplace must include a role for the curator to validate innovations that have achieved proof of concept and are investor ready, but it must also be able to identify promising innovations that are not yet investment-ready and facilitate their access to additional angel and grant funding to permit them to continue on the path towards proof of concept. Beyond just funding, many of these innovations also need access to incubators and accelerators, such as the NCIAA-Lemelson initiative, to help develop business plans, and many others need to fill skill gaps on the team developing the innovation.

- To help learn from failure. Naturally, many of these innovative projects will fail and not reach proof of concept. In many ways this is a success – especially if failure is fast, inexpensive, for the right reasons and we learn from it – because without failure there can be no innovation. A **curator** could facilitate this process and capture lessons learned.
- To conduct comparative analysis. Often the question is not only whether an individual innovation is ready for scale but also whether it seems more promising than other related innovations in the pipeline. This analysis could also identify synergies, complementarities, gaps and barriers at the level of industry sectors (see next point).

Complementing the **curator**, a **broker** would then be needed to fulfil the following roles:

- To catalyse collaborations across innovations and in some cases facilitate the creation of new social enterprise and industry sectors. Echoing the 2014 Omidyar Network report, *Beyond the Pioneer*,[26] we have found that in the pipeline of innovations, entire industries begin to emerge. These are clusters of innovations on topics such as sanitary pads, maternal health, sanitation, and more. There are often synergies across the portfolios of individual organisations. A **broker** could recommend support not only to individual innovations but also to clusters of innovations, and identify the support and conditions required to make those clusters thrive and benefit the poor.[27]
- To serve the critical role of linking clusters of investor-ready innovations with networks of public and private investors. There are websites attempting to do this but we believe innovation is a social process and the human element is key.

Naturally, it is less efficient to approach investors on a 'retail' basis – linking one innovation at a time to one investor – compared to having a marketplace of innovations linked to networks of investors. For example, topic-specific individual innovations or clusters of innovations could be linked with networks of investors.

It is just such an innovation marketplace that is now being developed under the Innovation Working Group of the UN Secretary General's Every Woman Every Child initiative.[28]

Key principles, lessons learned and future directions

So what would we share with others from our experiences over the past decade? We have developed a set of principles that underlie the Grand Challenges approach, as follows:

1. **Strategic and well-articulated Grand Challenges serve both to focus research and development efforts and to capture the imagination of and engage the world's best researchers and innovators.** The Grand Challenges model focuses on seeking solutions to well-defined problems. The initiative brings these problems to the attention of relevant communities of problem solvers, both individuals and organisations, and invites creative and forward-thinking approaches to address issues that, if solved, can dramatically improve the world we live in.
2. **Projects are selected based on public and transparent calls for proposals seeking the best ideas.** The Grand Challenges programmes do not purport to know the solutions to the world's most pressing development issues – but they are willing to take risks and invest to create new solutions. The Grand Challenges model aims to engage new problem solvers with fresh ideas.

3. **Funders, innovators and other stakeholders actively collaborate to accelerate progress and promote advances to ensure they serve those most in need.** The public, private, academic and non-profit sectors must work together to accelerate and scale-up innovations that can improve the lives of those most in need.

4. **Projects are selected not only for scientific excellence, but also for the likelihood that they will achieve the desired scale and impact**. Successful applicants present projects that, when proven successful through the collection of rigorous evidence, have the potential to serve those most in need. Investing in scientific innovation – as well as in the business and social innovation needed to increase impact at scale – will help ensure that these efforts have the greatest possible impact in terms of lives saved or improved.

5. **Researchers and innovators work to ensure that the fruits of their projects are accessible and available to those most in need**. Fostering ties to industry, either by helping bridge the private and public sectors or by directly funding a company, can create sustainable enterprises or reduce the time from discovery to development, production and impact. Key to this is developing global access strategies to ensure that those most in need benefit from new solutions.

It has not been plain sailing, and there have been significant lessons learned along the way.

These include:

- The original Grand Challenges in Global Health offered up to $20 million for all grants. We have learned that **a one size fits all approach is not wise** and that we need to more carefully craft the challenges with the funding matched to the design of the challenge. In particular, we have found a set of challenges

providing seed funding (in our case $100,000) for proof of concept, with clear stage-gates for scaling, is an incredibly helpful tool. These lessons informed the launch of the Gates Foundation's ongoing work under the Grand Challenges and Grand Challenges Explorations programmes, along with partner programmes such as USAID's Saving Lives at Birth[29] and Grand Challenges Canada's Stars in Global Health.[30]

- The need for a greater focus to **identify innovators from the developing countries who experience the challenges themselves**. Those innovators had a better sense of the local conditions that influence successful scaling and sustainability, including affordability, distribution channels and local cultural norms.
- The need to better **integrate science and technology innovation with social and business innovation**. As the Grand Challenges evolved from a framing in terms of technology alone (e.g. about half the original grand challenges were focused on vaccines) to a framing focused on end beneficiaries such as women, new-borns, children and girls, it became clear that stimulating innovation in social, business and financial processes, often in combination with each other and with technology, could yield significant impact. At Grand Challenges Canada they call this 'integrated innovation.'

Finally, there has been **one great surprise** – completely unanticipated by anyone, as far as I can tell: the spread of the Grand Challenges around the world. In 2008, Canada became the first country to propose a Grand Challenges approach in its development assistance, which resulted in the launch, in 2010, of Grand Challenges Canada. Next, USAID launched its Grand Challenges for Development initiative which demonstrates that the approach can be applied to a wide range of topics spanning health, agriculture, energy, education and even governance and

conflict. Norway, Sweden and the UK joined in the movement through Saving Lives at Birth and other Grand Challenges. India, Brazil, Israel, South Africa and Peru also launched their own Grand Challenges initiatives. Just this past year, Thailand, Ethiopia and China have launched Grand Challenges initiatives, as well as a new Pan-African Grand Challenges Initiative, hosted by the African Academy of Sciences.

Ignited by Bill Gates a decade ago, Grand Challenges has spread to become a global movement that continues to grow. The challenges we face in the world are too large to be solved by any one organisation or country alone. Grand Challenges provides a platform where different organisations – public and private, north and south, funders and innovators – can work together in partnership to solve global challenges. At its core, Grand Challenges is about the global governance of innovative solutions with impact. An immediate opportunity that can take advantage of this approach is the post-2015 sustainable development goals. These were finalised at the UN General Assembly in September 2015 and guide action for 15 years through to 2030. It is widely recognised that more emphasis has been placed to date on strategy development than on strategy execution in the development of these goals. Discussion is increasingly turning to so-called means of implementation. We believe there is no better platform to solve the world's challenges using innovation than Grand Challenges and its partners.

What to take away from this...

- The value of Grand Challenges for funding innovation is found in the process as well as the ultimate outcome. The large pool of potential solutions proposed creates a unique map of the problem area, which can be used to inform future strategic initiatives. Each challenge should be judged and learned from as an individual experiment.

- Just as the nature of the challenge needs to be carefully articulated, the size of the incentive and the stage-gating of funding should be tailored to each challenge.
- In order to avoid a glut of development innovations at proof-of-concept stage, funders need to work together to build a stronger development innovation marketplace globally, which will accelerate the quantity and quality of innovations transitioning to scale.
- Grand Challenges have contributed to a more open and democratic approach to funding development innovation, but the industry needs a greater focus on identifying and supporting innovators from developing countries who are often better placed to judge which solutions will make a sustainable impact.

Impact bonds have been the subject of much discussion in international development, but little tested so far. Here Toby Eccles, one of the designers of social impact bonds and the founder of Social Finance, explains how they work and their potential to transform international development efforts.

Impact bonds as a route to development innovation

Toby Eccles is the founder and Development Director at Social Finance.

Bringing outcomes into focus

In 2005, I was working with the UK Commission on Unclaimed Assets, to understand how a significant new potential source of funding, unclaimed or lost money from the banking system, could be put to good use. Working with some of the most experienced people across the UK social sector, we examined how finances functioned in this area. As I learnt more, I became increasingly certain that the relationship between the social sector and its various funders was a major dampener on the effectiveness of the services that were being provided. At that time, there was a clear tension between government funders and other grant-makers, such as foundations or philanthropies.

Government often regarded grant-makers as easy touch funders who don't ask enough questions or verify effectiveness. Too often, they felt that grant-makers relied on stories they were told of how services affected a small number of people and didn't think through impact at scale.

Grant-makers in turn saw government contracts as overly restrictive, failing to reward good quality service or holistic engagement. Bureaucratic functioning, willingness to engage

in damaging procurement processes and counting of inputs all featured highly in the sets of skills that got social organisations further contracts. So grant-makers were accused of having a measure of success that was based on ability to tell stories, while government funders based success on the ability to run an efficient bureaucracy. In other words, neither was good at defining success according to whether the services provided worked, and made a difference to people's lives.

Regardless of where one sat on this spectrum of approaches, typical processes for measuring effectiveness were long-term, expensive evaluations that were published after a programme had finished – if they were published at all. This created an overall impression that the system was not set up to reward success and certainly didn't penalise failure.

This was in contrast to markets, which have clear metrics of success – for instance, revenue and profits in commercial markets or published papers in research markets – and mechanisms for punishing those who are underperforming. In the UK social sector, it was becoming clear that the existing incentives and metrics of success were some way removed from the stated aim of improving people's lives.

From this point, I got interested in finding new ways of contracting services for the outcomes that the social sector seeks to achieve. This led to the formation of Social Finance, and the launch of the first Social Impact Bond in 2010, followed by another 13 that we have since been involved in. More than 50 variations of the basic model – where investors pre-finance social organisations, and governments pay for proven results – are now in implementation across the world, in each case attempting to shift the focus of social sector programmes, and the metrics of their success, to focus on real outcomes.

More recently, colleagues and I observed the same misaligned incentives when it comes to development assistance. Social Finance first started working on impact bonds for development some three years ago and partnered with the Center for Global Development to bring together a working group to consider them.[31] We have found that social impact bonds can help navigate a central innovation-related challenge in development funding: how to make contractors on the ground accountable for what they do, while encouraging them to adapt to the local environment and changing circumstances. Traditional development financing models have focused on careful upfront planning, producing a theory of change and, from that, a detailed log frame on which a contractor can be procured and then held to account. This model helps to ensure that the funding is spent in the way that donors expect. Although it isn't inevitable, in most settings this arrangement serves to discourage adaptation and innovation.

With impact bonds in contrast, while services are still carefully planned, they are not as precisely and rigidly set out as they were in previous types of contract. Instead funders specify and pay for outputs and outcomes, with deliberate space given to service providers to adapt to 'learning on the ground' and emerging innovations. This brings more of a private sector drive for results to the selection of providers in the social services. Instead of investing in the lowest cost version of a specified service, investors are more likely to invest in teams they believe will deliver outcomes in the most effective way, to demand clear metrics, and to expect adaptation and innovation along the way.

Although the idea of applying this approach to development has generated a lot of interest, impact bonds remain hard to implement. Below, I outline reasons why they are causing excitement and for whom, the challenges encountered, and how these challenges can be overcome.

What makes impact bonds different from traditional financing?

In the development projects that Social Finance is working on, we find that different partners are keen on the model for a range of different reasons, including risk transfer, enabling adaptation and complex delivery at scale.

Risk transfer

The key difference between impact bonds and other results-based models is that investors provide funding to service providers before the output and outcome payments are produced, thereby taking on some or all of the financial risk of failure. Shifting this risk is attractive to donor outcome funders, but also to NGO service providers, who come to us with many project ideas. Impact bonds allow service providers to overcome challenges with other results-based models, as they do not require the upfront capital themselves. Service providers are attracted to the provision of working capital, but moreover welcome the private sector expertise that accompanies the risk transfer and helps to improve both project delivery and the measurement of outcomes. We have heard frequently from service provider organisations in the UK, where the impact bond model is more advanced, that secure financing for multi-year programmes, along with a private sector approach to data management and delivery, has helped them to achieve greater impact.

Enabling adaptation and complex delivery at scale

The UK Department for International Development is interested in building upon previous research to implement a cost-effective solution to Rhodesian sleeping sickness in Uganda.[32] Rhodesian sleeping sickness is a neglected tropical disease that is transmitted from cattle to humans by the tsetse fly. It is difficult to diagnose and treat in humans and as a result is often fatal, and

could become even more dangerous in the next ten years due to a risk of overlap with a different strain of the disease in Uganda. A cattle injection and spray treatment has proven effective on a pilot scale, and there is the opportunity to initiate a multi-year mass cattle treatment programme in the country. If administered effectively, the treatment would quickly reduce the prevalence of human infective parasites in cattle. This large-scale treatment programme is a complex logistical challenge that would be paired with a heavy awareness-raising campaign and support for farmers. As a part of the design work for this potential impact bond, we have introduced new, rigorous systems of data collection and analysis, using mobile phone technologies, to track the treatment of cattle in real time. The data generated would be used for adaptive management purposes to optimise delivery and enable this complex set of interventions to be delivered at scale.

Outcome transparency

Social Finance is working with the Inter-American Development Bank to develop impact bond strategies for Mexico, Brazil and Chile. In Mexico and Brazil, populations are growing but the tax base is still modest. There is emerging interest in supporting social services from the private sector, from wealthy individuals and from foundations, but there is also widespread distrust of government. The impact bond model was therefore seen as a route for multiple funders to engage in projects whose results will be rigorously measured and impact will be ascertained. A possibility being explored is outcomes funds in areas such as education or reducing reoffending rates, to support multiple projects, with clear pre-defined success metrics and funding coming from government and other sources. The potential for greater transparency of outcomes to generate learning and build public engagement is significant.

Challenges in practice

While the various partners involved in development impact bonds typically see a range of possible benefits, a number of challenges persist when it comes to implementation. Some of the biggest ones include:

Impact monetisation

In development and the social sectors more broadly, there is little experience with valuing outcomes or risk transfer. But for impact bonds in the developed world, there are typically calculable consequences of failure, which entail costs borne by the state. For example, failure to reduce recidivism means more crime and more people in jail, and failure to reduce the development of diabetes increases long-term health costs. In the international development context, improved outcomes lead to improved lives but rarely lower costs elsewhere. This brings the problem of outcome valuation into much sharper relief. For impact bonds to be an attractive approach, the cost per outcome using the model should be lower than the expected cost per outcome on a normal basis.

But the cost per outcome on a normal basis is often not measured in the development sector. This means that implementation risk is likely to be underestimated – in other words the cost per outcome in reality is likely to be higher than the perceived cost. Many development agencies seem to revert to pricing inputs, and assume that the outcomes will be the same whether the project is funded on an input or outcomes basis. Without taking into full consideration the benefits of an impact bond, the costs introduced – namely costs of structuring a multi-partner deal and paying investors returns for success – look unappealing.

Fiduciary risk versus outcomes risk

Fiduciary risk is the risk that some of the money for a development project is abused by those managing it. Outcomes risk is the risk that the project does not deliver the improvement to people's lives that was the ambition of the project. In many agencies, particularly those with parliamentary accountability, fiduciary risk trumps outcomes risk. So suggesting a model that seeks greater flexibility in order to achieve better outcomes requires a good explanation to the fiduciary risk implications created. On the face of it, solutions such as open book accounting should help. But what happens if you want to do something that agencies are uncomfortable with – pay a higher salary to get a particularly strong project manager, for example? If each step requires permission, the space for adaptation and innovation is reduced, the entire proposition looks less attractive to investors, and it becomes difficult to really test the model. Linking funds to independently verified outcomes should diminish fiduciary risk, but if fiduciary risk takes precedence over outcomes, it becomes a real stumbling block.

Incentives to disburse funds

Anyone working in development has probably picked up on aid agencies' frequent focus on the cost of getting money 'out the door'. New models that require time and effort to put together are automatically at a disadvantage. Donors often feel pressure to disburse funds by a certain date, regardless of progress achieved. It then becomes understandable that robustly measuring outcomes is not a priority.

Impact bonds: moving forward

Despite these issues, there are a substantial number of impact bond projects in development in the pipeline. In addition, we are exploring how to overcome the challenges described above. For example, we are developing outcome funds where different

donors pool funding to pay for agreed outcomes under multiple impact bonds. This significantly reduces the transactions costs of putting together individual deals and helps to quickly build knowledge about how outcomes-based contracts can be structured efficiently, including how outcomes can be priced.

In the UK, the Cabinet Office's £20 million Social Outcomes Fund, launched in 2012, and the £40 million Commissioning Better Outcomes Fund, launched by the Big Lottery Fund in 2013,[33] have both been instrumental in catalysing the Social Impact Bond market. These funds provide development support as well as large-scale commitments to pay for robustly measured social outcomes resulting from the bonds. In development, outcomes funds could be established by sector or theme, such as education or building inclusive markets, and work to achieve the same kinds of systemic changes.

We are also working more on enabling the growth of social businesses. Many social businesses are already providing services to low-income consumers, which also provide a benefit to wider society in areas such as rural electrification, water distribution or clean cook stoves. Often these businesses' ability to expand is hampered by not being able to generate significant returns for investors. They are therefore reliant on a relatively small pool of impact investors that prioritise social outcomes (as opposed to financial returns) for expansion or they refocus their efforts on middle-class consumers. By monetising the social value they create, if successful, in serving low-income consumers, there is an opportunity to improve their returns and potential to expand. For example, we are developing the use of outcomes-based financing to support enterprises and accelerate the development of markets for off-grid energy products.

The difficulties outlined above for outcome funders in engaging with impact bonds are mainly focused on large aid agencies. The motivations and circumstances of private philanthropists or foundations are different. If they are willing to go through the process of developing an impact bond and pay a proportion of the outcome payments, then they could potentially get co-funding from the wider aid agencies. The subsidising of the costs of development and reduction in outcome payments would help overcome all the concerns outlined above. For the foundations, there is leverage on their funding and the potential to demonstrate a more outcome-oriented and transparent way of working.

The challenges facing getting development impact bonds up and running have revealed just how different the impact bond approach is from the normal way of doing business in the aid industry. These challenges have left many of us even more convinced that the impact of using such a model would, in the right circumstances, be huge. But we need a functioning market that defines success according to whether resources spent have improved people's lives. Impact bonds are a way of increasing the focus on outcomes. They can facilitate and enable innovative and adaptive approaches by ensuring that spending reflects realities and needs on the ground. And they also point to a new kind of development effort, less dominated by institutional interests, and more focused on results that matter to the people that the sector aims to help.

What to take away from this...

- Social impact bonds can stimulate impactful innovation by a) de-risking the funding of new ideas and approaches, with other investors taking on the financial risk of failure; and b) focusing attention on outcomes, defining success not on administrative metrics or anecdotal performance of an intervention, but according to whether the resources spent have improved people's lives.
- Monetising this social impact, or 'valuing the outcome' is a central challenge, and even harder in developing contexts than in developed countries, where a successful outcome usually results in a cost saving to the state.
- Impact bonds are likely to help stimulate successful social business communities, and to enable a more transparent and adaptive approach to funding projects in development.
- As a new type of intervention, the transaction costs of designing individual development impact bonds are currently high. Development funders should consider collaborating to set up sectoral or thematic outcomes funds which support multiple impact bonds and influence an entire system.

The Children's Investment Fund Foundation (CIFF) is a relatively new player in the development landscape. With an endowment of over £2 billion, it has sought a systemic approach to identifying challenges, supporting innovation processes, and addressing market failures to drive demand for innovative solutions. In this piece, we get an insider view of how CIFF thinks about and manages innovation efforts.

How philanthropies can be pioneers in funding innovation

Sarah Dunn, Former Director of Strategy, Children's Investment Fund Foundation.

The role of philanthropies in international development is on the rise. We now have seats at the table for major global meetings, such as the Financing for Development Conference in Addis Ababa in 2015, and a growing number of joint partnerships with more 'traditional' development actors.

To succeed, philanthropies have to play to their strengths, understanding the characteristics that separate them from other international development actors and give them the chance to be truly innovative. In particular, that means the ability to take risks and do things that other actors may not be able or willing to try. Of course, philanthropies still need to act responsibly and collaboratively, and to be accountable for their actions. But freed from the need to chase funding, and more insulated from the political pressures and scrutiny facing taxpayer-funded bodies, philanthropies have more room for manoeuvre to try new things, finding out what works and – perhaps more importantly – what doesn't.

This is an important part of the innovation story. Innovation is rarely about finding 'silver bullets'. It is about trying new approaches, making a range of investments, learning from pilots and – crucially – having the discipline and patience to take the successful ones to scale. Unfortunately the world is littered with small-scale development innovations and pilots that showed promise but were never taken up.

At the Children's Investment Fund Foundation (CIFF), we try to focus on areas that promise high impact for poor children but where the potential risks and financial returns mean that commercial investors will not get involved. And it's not just commercial investors that may be wary of taking risks. Like some other philanthropies, CIFF is challenging itself to do more in areas that have attracted less attention from traditional donors or where donors have been more cautious, such as adolescent reproductive health or child slavery.

From our analysis of why other investors might have been deterred, a suite of potential interventions can follow.

In some cases, we need to get the data. Without good data, we and others can only guess at the impacts we are having. It's hardly surprising that essential investment would be slow to emerge if there is no way of measuring its impact. At the project-level, we insist on rigorous testing of all the innovations we fund, to evaluate their impact. But in some cases, the weakness of the evidence base is a more systemic problem. If the evidence base is weak in one of our core areas of investment (as, for example, we found in our work on early childhood education), then we set out to generate it ourselves. For example, we worked with a range of partners to develop two metrics which will provide data for the improved planning and implementation of early childhood services: first, to measure child outcomes for early childhood development; and second, to measure the quality of early

childhood education services. Together, we are testing these metrics across seven countries, and will then look to increase their uptake so that governments and donors can look across their investments and judge which ones are having the greatest educational impact.

Innovation applies to how we go about getting the data, too. In our work on malnutrition, for example, we have invested in big data approaches to map the prevalence and scale of the problem, as well as inform the targeting of our investments.

This focus on data and evidence is at the core of what we do, but a lack of evidence is not the only barrier to scaling effective innovations that we see. In some cases, we find that essential solutions are available but are priced at a level that limits wider take-up. This is where we look to deploy a range of market-shaping interventions to drive down costs or accelerate the process of bringing new products to market.

These include support for R&D. For example, we have invested in MANA, an independent supplier producing life-saving nutrition products at the lowest-cost possible, as part of our wider effort to drive down global prices of ready-to-use therapeutic food to treat severe acute malnutrition.[34] MANA has become one of the lowest-priced suppliers in the world, selling its Mother Administered Nutritive Aid at $45.00 per case in 2015. As a result of price reductions from MANA and other large suppliers, the average price of ready-to-use therapeutic food has dropped over the past five years.

We have also partnered with Diagnostics for the Real World, a spin-out company from the University of Cambridge, to develop and take to market SAMBA, a diagnostic tool that could transform HIV testing for children.[35] The tool, currently available in Kenya, Uganda, Malawi and Zimbabwe, aims to increase and

speed up the diagnosis of early infant HIV. The latest version of the instrument offers an effective 'sample-in, result-out' test without the need for centralised laboratories or specialist technicians. Easy-to-read results are obtained in less than two hours and indicated by a simple blue line, similar to a pregnancy test.

We are also experimenting with volume guarantees and first-loss guarantees to accelerate the viability of market-based solutions. For example, in partnership with Pfizer and the Bill & Melinda Gates Foundation, CIFF is funding a buy-down mechanism to immediately reduce the price of Sayana Press, an all-in-one, pre-filled, non-reusable injectable contraceptive.[36] Alongside driving down the price the product we are supporting efforts to register the product in new countries where the demand for family planning is high, and provide training for health workers to offer the product alongside counselling for girls and women.

Direct investment in commercial solutions is another approach to taking new solutions to scale. One example of this is our investment in local businesses in Ghana to increase the production and availability of micronutrient-rich foods targeted at pregnant and lactating women.[37] We will also support the communication and marketing activities to promote appropriate consumption of the fortified foods by women. We hope this will develop a viable commercial solution, which will be financially self-sustaining.

Finally, we are exploring how to use new financing structures to de-risk innovations for funders. Drawing on pioneering work on social impact bonds in the UK (discussed in more detail by Toby Eccles in his essay for this collection), we have partnered with the UBS Optimus Foundation on the first ever development impact bond: a three year pilot project to improve student retention

and learning outcomes in 150 schools in Rajasthan, India.[38] We are investing heavily on evaluating and learning the lessons of this approach, with a view to showing that a development impact bond is a viable structure for financing and delivering innovation. Another example is our investment in an independent fund for nutrition to catalyse new resources and support high-impact programmes to improve children's nutrition: The Power of Nutrition. The Power of Nutrition[39] aims to unlock $1 billion to help tackle child malnutrition at scale in some of the world's poorest countries. The fund has already attracted high-profile backers such as UBS Optimus Foundation, the UK's Department for International Development, UNICEF and the World Bank. The fund has been designed to multiply each dollar donated by private funders four times over with new financing secured from other funders.

Our focus on evidence means that CIFF pays close attention to learning from our investments as we go, monitoring progress and adapting our approach as required. We have a team of dedicated evidence, measurement and evaluation specialists who provide internal expertise and oversee a portfolio of third-party evaluations. Over three-quarters of our total investment portfolio is independently evaluated and assessed for impact.

Because of the flexibility and resources we have, CIFF, and other philanthropies like us, have a special responsibility to innovate. But we can only ever be as innovative as the projects we find to fund. An ongoing challenge for us is to find ways to strengthen our pipeline of potential investments, including experimenting with other ways to find promising ideas and social entrepreneurs to back. We should think about using a range of new approaches, such as challenge funds, or prizes or crowdsourcing platforms, so that we can continue to invest in new approaches that push the frontiers of our knowledge and change children's lives.

What to take away from this...

- Philanthropies can play a unique role in funding innovation in development because they are insulated from some of the pressures of traditional donors such as public accountability and the pressure to disburse funds according to an administrative schedule
- There are particularly big opportunities for impact in addressing a) neglected or controversial issues; b) bridging gaps in innovation funding – at the early stages following orphaned pilots or at the later stages of de-risking commercial investments for other funders and market shaping interventions.
- Philanthropic funders can play an important role in testing and de-risking new approaches to both funding and evidence generation that can be rolled out across the sector.

Part two: **How to organise for innovation**

Oxfam GB

Insights into how one of the world's largest international NGOs is trying to build a culture that enables innovation across the organisation

Médecins Sans Frontières Sweden Innovation Unit

How this design-led team found a niche between influencing creative short-term emergency response and long-term organisational transformation

International Rescue Committee

Choices behind a new strategy for innovation, and the design of an R&D unit that will enable the design, testing and scaling of better solutions

UNICEF Innovation Unit

Lessons drawn from eight years of efforts to instigate and scale innovations within a bureaucracy of 1,200 staff, working in 190 countries

At a strategic and cultural level, development organisations have tended to operate as 'answer delivery systems' that are based on providing known solutions in a timely fashion, whatever the context. The central organisational challenge for innovation is that they need to shift to become 'answer generating systems', that develop more appropriate, higher-impact responses to problems in many different contexts.[40]

Organising for innovation is as much about breaking the existing rules as about making new ones. It means challenging ingrained assumptions and practices or, alternatively, instituting new methods systematically for managing innovation better and anticipating future needs. These essays represent the diverse ways in which development organisations are attempting to challenge their own practices, as well as systematically identifying, testing and scaling better solutions to the problems they face.

The approaches range from formal innovation strategies instigated by leaders, to bottom-up experimentation taking place under the radar; from cross-organisational influences aiming to nurture mindsets and behaviours at the levels of individuals and teams, to semi-autonomous units that apply rigorous methods to the development of novel products or technologies. Among many insights, it's worth drawing out two cross-cutting messages that seem relevant in all of these contexts.

The first is that innovation requires dedicated time and space within organisations. In their essay, MSF compare the task of a humanitarian innovator to a firefighter attempting to innovate when in a burning building. Ingenious workarounds and creative

fixes to immediate problems may come thick and fast, but transformational approaches are only likely to come with time for reflection, analysis, questions and wider support. Likewise, as Oxfam point out, leadership that demands innovation without creating the safe space for it – by bearing the risks and consequences – is likely to result in unscaleable pilots at best, but at worst, re-labelling of business as usual.

A common response from organisations is to operationalise their commitment through the creation of a dedicated innovation role, team, unit or lab. The labs, teams and units covered here all point out in different ways the importance of maintaining very close connections to the core work of the organisation. For the UNICEF innovation unit, their role is often a facilitator or translator of new ideas and practices. MSF Sweden's innovation team liken themselves to diplomats, who after the honeymoon period of exciting new opportunities, work to deal with the culture clashes and mismatched expectations that are unveiled. IRC describe the careful balance required between autonomy of innovation and integration with core delivery experience to generate new solutions that are both challenging and workable.

The second is the need to clarify the goal of supporting innovation, and to beware the trap of 'innovation speak'. In this section, UNICEF voice the strongest warning about 'fetishising' the role of an innovation unit or officer, while Oxfam describe the challenges of identifying innovations within their own work without a shared understanding of what innovation means. The answer seems not to be to focus on developing a written definition of innovation, but instead to work on a shared understanding of the goals and ambitions of innovation. These essays describe the importance of robust innovation processes – from prototyping to piloting to rigorous evaluation

- and of different skillsets from human-centred design to behavioural science. Each approach clearly has its own value in different contexts and requires distinct sets of capabilities and partnerships. What's critical to selecting the right approach is to fully understand the problem one is seeking to solve, the opportunity one is trying to create, and the trade-offs of different tools and approaches.

This article looks at the organisational dimensions of innovation in Oxfam GB, one of the world's largest NGOs. It explores the role of leaders, how innovation processes should be managed, the tensions between different cultures, and puts forward some provocative suggestions for innovation strategies at Oxfam, and for the sector as a whole.

Seek impact first and innovation will follow

James Whitehead, Global Innovation Advisor, Oxfam GB.

Innovation in development is more important than ever

The context for people living in poverty today is changing in every country in the world – and more rapidly than ever. BOND's recent paper, *Tomorrow's World*,[41] identifies seven megatrends: climate change and planetary boundaries; demographic shifts; urbanisation; natural resource scarcity; geopolitical shifts; processes of technological transformation and innovation; and inequality. As noted in one recent Oxfam paper, in the face of such multifaceted change, International Non-Governmental Organisations (INGOs) like Oxfam need to adapt. The costs of maintaining business as usual are portrayed by recent global business failures:

> *The year 2012 marked the end of two iconic global brands: unable to compete with the internet-based Wikipedia, Encyclopaedia Britannica ended print production after 244 years in business and Kodak, a firm that in 1976 'accounted for 90 per cent of film and 85 per cent of camera sales in America', and which was 'regularly rated one of the world's five most valuable brands' could not adapt to the demands of digital photography and filed for bankruptcy after 124 years of operation... Could disruptive change of such a*

> *magnitude also threaten top brands among international civil society organisations (ICSOs) such as Amnesty International, Greenpeace, Oxfam or Save the Children?*[42]

While international development is a few steps behind other sectors in terms of disruption, we are nevertheless increasingly seeing both new organisational forms and new modes of delivery that offer different routes to scale. Nesta's paper *Making It Big: strategies for scaling social innovations* outlines 17 approaches to scaling.[43] These include joint ventures, franchising and licensing, as well as more standard approaches like campaigning and setting up new branches. It shows how new business models can both disrupt the existing status quo and bring greater benefits for communities and customers. Examples of these new models in development include M-Pesa, the Kiva loan portal, Avaaz's exponential growth as a potent advocacy voice, the Making All Voices Count initiative and Poverty Action Lab's focus on research-driven development. The Future Strategy Group states that:

> *New business models will surely emanate from more catalytic approaches to impact. Social enterprises, direct or donor-subsidised shared value projects with the private sector, and fee-for-service consultation/facilitation all represent new ways of offering services and getting paid.*[44]

There is increasing recognition that 'wicked problems' require much more collaborative, iterative approaches and a move beyond one-to-one, project-based collaboration to solutions at a more systemic level. The most powerful impact in the sector is consistently coming from unusual combinations – whether between research institutes, mobile network operators, faith-based groupings, student groups, media providers, the women's movement, or government agencies.

The innovation challenge in Oxfam

Oxfam has a great heritage of adaptation and innovation born out of the desire to see social change – it has been on a journey of perpetual transformation since its inception during the Second World War. It has a good track record on innovation, stretching back to its earliest days. In the 1950s and 1960s, it pioneered charity shops and humanitarian response. In the 1970s, it developed water tanks for emergencies and brought 'magic stones' terracing to the Sahel to reduce desertification, both of which are in use today. The 1980s saw the invention of energy biscuits with Oxford Brookes University and one of the first consortia on HIV/AIDS. In the 1990s, it launched the first Fair Trade Foundation and was nominated for the Nobel Peace Prize. In the 2000s, it played a pivotal role in the Make Poverty History campaign and developed new approaches to fundraising such as Oxfam Unwrapped presents that have now raised more than £50 million. Today Oxfam is still innovating and seeking to bring impact at scale (see Box 2).

However, because the challenges are more complex and the world is changing faster, we are not nearly creative enough and not nearly collaborative enough in addressing the problems we face today. As noted by Oxfam's Senior Strategic Advisor, Duncan Green: *"[the wider context] places a greater premium on innovation, but achieving it with any consistency has proved difficult for Oxfam."*[45]

Factors that enable and block innovation in Oxfam

To better understand how innovation happens in Oxfam, we undertook qualitative research on the enabling and blocking factors of innovation across the organisation. Our methodology was to explore examples of positive deviance in innovation – itself an important innovation in international development. We wanted to find the uncommon but successful behaviours or strategies

that have enabled certain teams to find better solutions to problems. We interviewed staff across 13 innovative initiatives that have brought, or have high potential to bring, impact at scale. These initiatives worked with a range of stakeholders, used elements of systems thinking and represented a variety of Oxfam's work. They range from global campaigns, such as Behind the Brands, to using mobile phones to deliver health messaging and money in Somalia.

Box 2: **Examples of ongoing Oxfam innovations**

MLink in Somalia is allowing Oxfam to reach remote communities in insecure locations. It operates through e-vouchers, which are sent to hard-to-access beneficiaries who take them to preapproved local vendors in the market in exchange for basic goods.[46] The vendors, in turn, receive rapid mobile payments from Oxfam. In collaboration with UNICEF, this approach is being rolled out to reach a million people for polio prevention. Yet it also highlights the fact that many of our existing strategies simply will not work in these environments.

Flood insurance for Bangladeshi farmers was launched in 2013, with a feature of fast payout to flood-hit people. The pilot index insurance product covers 1,661 poorer families in 14 villages, but aims for far greater reach once tested. The scheme is part of a consortium including Swiss Re and local insurers and is developed by Oxfam. The challenge is to develop a model that works commercially, that benefits all stakeholders and that can scale rapidly once proven – and this takes time and energy for little early reward.

Oxfam's Behind the Brands campaign aims to provide people with the information they need to hold the world's ten largest food and drink companies to account for what happens in their supply chains.[47] In putting together a scorecard based entirely on

publicly available information on company policies, the campaign poses the question, 'What are they doing to clean up their supply chains?' This demonstrates how the choices of much larger actors, whether born out of idealism, enlightened self-interest or the need to maximise shareholder value, can bring enormous benefits for poor families.

The lessons on how innovation happens at Oxfam ranged from how we talked about innovation through to organisational structures:

1. Don't talk innovation, do it

We found that those who were driving innovation in Oxfam weren't often explicitly trying to be innovative, nor did they necessarily self-identify as innovators. They just felt that there might be better ways to address a range of problems, and got on with working with others to solve them. Of the initiatives we

looked at, none of them happened because we were consciously trying to be innovative.

Similarly, when preparing for the research, we found that colleagues across the organisation stumbled over the word innovation. We constantly hit false positives (where work was identified as 'innovative' but was actually business as usual) and false negatives (great examples that weren't mentioned). When we asked people what work is exciting and has potential to make a difference, that's when we had a higher hit rate.

In Oxfam, the question 'Is it innovative?' really doesn't help because it takes us away from the more important question: 'Does it have potential to bring change at scale and what are the ways that impact can be increased?' Innovation should not be seen as a destination in its own right, but rather as a by-product of collaborative and creative problem solving.

The language of innovation can often get blank stares. 'Making meaningful change', 'having a transformative effect', and so on, is more familiar language. This highlights the fact that innovation strategies may need to change tack. We are therefore often looking at innovation by stealth – for example supporting new business model development, sneaking approaches to ideation into programme design, and focusing on building staff capabilities around influencing.

2. **People matter (and they play many roles)**

In the research we also found that 'innovation' often starts with bringing in, recognising, nurturing and retaining talent. We found that there were a number of roles that needed to be in place for these positive deviants to adapt and thrive. Those who drive the change consistently go beyond the call of duty. They are open to opportunities and challenges in their context, curious and creative in their responses, and delivery focussed.

We called these staff members 'dynamic drivers'. They were part of supportive teams who shared the vision, and were supported by 'amazing advisors' – those with wider networks and specific technical expertise.

There are leaders at every level who keep open the space, act as champions, find resources, encourage teams to take risks and defend them when things get difficult or don't deliver. One respondent said about her manager, *"She would say, 'Just go and do it, I believe in you.' I knew even if I failed, she would be there to support me."* Diversity also matters. It is often the colleagues whose experience has included time in different sectors and with different types of organisations that are more creative and visionary than those who have taken a 'straight-line' career path.

3. Unlock time and resources from within the status quo

Frequently those staff who can drive forward these new ways of working face a chronic lack of time as they are busy delivering existing obligations. One staff member said: *"In the early stage this wasn't core work – it was done at weekends and nights because we didn't have funding."* And yet these initiatives might become the cornerstone of our future programmes. Any successful organisation needs to be simultaneously focused on existing activities, emerging ones and more radical possibilities that could be the mainstream activities of the future.

I would say that the single biggest challenge for innovation in an organisation like Oxfam is carving out time to work on the future, instead of being caught up in the tyranny of the present. In Asia we are developing a change-at-scale accelerator that supports country staff to shape the next generation of programmes, with time commitments agreed at the outset by senior managers. We are also finding that ideas spread when staff and partners experience different ways of working; for example, a recent co-

design process involving young people, partners and staff from different countries is opening up new possibilities for future work.

Flexible funding is also vital in the early stages and helps us experiment. We do not know how valuable 3D printing will be in future humanitarian crises, but flexible funds from enlightened donors are helping us to find out. Because plans change so rapidly in the early stages, flexibility and openness from donors is crucial. The development of the urban safety net programme with the Kenyan Government, for example, only happened because of DFID's flexibility. With a more conventional fixed plan it would have failed.

4. Harness creative collaboration

Another critical element is vibrant collaboration and partnerships. While working with diverse stakeholders takes time and effort, we found it pays dividends when we involve the right people and are prepared to develop solutions together. For example, the Arms Trade Treaty campaign[48] included an international group of more than 65 pro-bono lawyers to generate legal analysis on the implications of the draft treaty text that helped identify key lobby priorities, as well as provided legal support to delegations at diplomatic conferences.

Building creative collaborations is often not perceived as mission critical, even by senior staff. A lot of organisational attention may be drawn to urgent short-term priorities and the pressures of maintaining and delivering existing work. Systematic scanning of the horizon for opportunities beyond the borders of the organisation and exploration of potential collaboration may also be seen as a luxury rather than a necessity. For example, our early work with a large brewery in Southern Africa, to develop marketing campaigns on violence against women, is taking time to develop but has potential to be far more powerful in changing behaviour than more traditional approaches.

Another challenge is that the strong organisational identity within Oxfam staff may also have its own downsides. It can create a 'them and us' distance between Oxfam staff and those outside, and it may inadvertently establish parent-child or donor-recipient relations between larger and smaller organisations. It may create a 'not-invented-here' unwillingness to explore solutions developed by others.

Oxfam needs to find ways to increase the porosity of its borders, to play a greater brokering role and act as a platform for collaboration. We need to intentionally increase our 'collaborative advantage' rather than our 'competitive advantage'. Concrete steps to get there might include getting people out of their organisational bubbles by using secondments, both to and from Oxfam, to lay the foundation for future collaboration with others and to bring in fresh thinking, as well as wider use of co-creation methodologies.

5. Create the enabling environment, culture, and mind-sets

When looking at how innovative programmes come about in Oxfam, it can appear haphazard, chaotic or uncontrolled. If one sees Oxfam as a simple, hierarchical system then that will be the case. The way that new initiatives flower in Oxfam makes more sense if the organisation is viewed as a complex, interconnected system.

The role of senior leadership is predominantly to set the broad direction and create the conditions for innovation to flourish, but this can easily default to focus on top-down measures and emphasis on control. It has been interesting to see how cash programming in emergencies, where Oxfam has played a pioneering role over many years, has moved from the margins to the mainstream within Oxfam and how mind-set shifts were needed across the organisation to make it the new normal. The shift to cash has also entailed changes to our staffing, our structures, our systems and our partnerships, such as the cash

learning partnership (CALP).[49] It also requires mind-set shifts in the wider sector, and we have worked hard to help that shift. Some major donors are still highly suspicious of the use of cash to meet urgent needs, more because of entrenched views than the absence of evidence.

Conclusion

There is recognition that given the growing pace and complexity of global change, large INGOs need to raise the bar on innovation to a new level.

For Oxfam, perhaps more important than creating innovation funds or establishing labs is embedding a new leadership model that is rooted in complexity theory and reflects the types of behaviours and approaches that are necessary to support complex, evolving change with a wide range of stakeholders.

Innovation should be seen as a by-product of collaborative, problem-focused resourcefulness. Our goal is not to be innovative for the sake of it, but to work with others to bring about positive change at scale.

You can't bolt on innovation to an organisation to develop this resourcefulness – you have to work deeply within the organisation. There is scope for large NGOs to be both the disruptor and the disrupted, and what will enable those disruptors is an organisation-wide agility and the ability to collaborate with others. Scaling innovations often needs changes across different levels of an organisation – something shown by the challenge of scaling cash transfers (as explored in more detail in Paul Harvey's essay).

Big NGOs don't easily reinvent themselves, and there is a lot of process and culture that can get in the way. The lessons from Oxfam are that creativity and originality rely on unique

combinations of people, leadership, flexible resources, deep collaboration and an enabling culture:

People: we find that there are certain combinations of roles within an organisation like Oxfam that enable change to happen. We also find that diversity of experience adds to the creative urge, making people who are good at problem solving even more effective.

Leadership: innovation efforts may need to be less directive, less focused on demanding innovation, because that will often result in hard to scale and easy to ignore pilots. Instead, leadership should be more focused on creating the enabling conditions and actively fostering what emerges. Less architects, more gardeners, to borrow a phrase from Hayek.

Time and money: given the rate of change in the external environment, the organisations that will thrive are those that are investing an increasing proportion of their time, money and energy in the future. Yet the tyranny of the present is hard to escape.

Collaboration: whether it is the collaborative advantage of a partnership with Visa, or the network of lawyers in an Arms Trade Treaty campaign, the most exciting work always seems to come out of interesting combinations of actors.

Culture: the cultures of organisations that will thrive in the coming decade will be different from those that thrived in the last decade. They will be highly collaborative across disciplines, flatter, highly connected, open to experimentation and learning, open to considered risk-taking, very outward facing and able to co-create value with other organisations. It is this focus on culture change across the organisation that will enable Oxfam to be the dynamic force for change that it seeks to be in the coming decades.

There is much that we can do, and are doing, to build on our heritage and adapt for the future. And if we, and others, don't raise our game, our relevance will slowly decline and the opportunities to change more lives, more deeply will remain untaken – and this does people living in poverty a huge disservice.

What to take away from this...

- Innovation can be a confusing concept and an unhelpful label. Organisations need to find ways of talking about it that work for them. For Oxfam this meant focusing on achieving better outcomes and new ways of working, as well as clarifying that it is a means to an ends rather than a goal in its own right.
- Diverse internal teams and imaginative external collaborations are more likely to result in innovative projects and better outcomes than stand-alone pilots and 'bolt-on' activities.
- Leadership in innovation means creating the space for systematic experimentation and horizon scanning, and is as much about accepting the risks and consequences for failure as it is about articulating a new strategy and set of demands on employees

This article explores the ways in which the MSF Sweden Innovation Unit, a national branch of the world's largest independent humanitarian response organisation, has worked to bring innovation to the forefront of crisis response.

How to support innovation in crisis settings

Marpe Tanaka, Andreas Larsson, Ana Laura Rodrigues Santos, Médecins Sans Frontières Sweden's Innovation Unit.

What is innovation and why is it so hard in crisis response?

Innovation has always been core to the activities of MSF as a global medical humanitarian organisation. Dealing with emergencies and crises in a wide range of challenging contexts, from violent conflicts like Syria to natural disasters such as the earthquake in Haiti, creates situations that constantly require creativity and improvisation.

Indeed, the origin of MSF itself can be seen as an innovation, when six medics working in the bloody conflict in the Nigerian province Biafra in 1968 decided to forgo the Red Cross notion of neutrality and speak out against the brutal behaviour of the Nigerian government. Over the following years, more doctors working in such conditions started to speak out and laid the foundations for a new and questioning form of humanitarianism that would ignore political or religious boundaries and prioritise the needs of those suffering. To do so challenged the traditional idea that humanitarian assistance would be neutral. As Dr. James Orbinski, President of the MSF International Council, put it when accepting the Nobel Peace Prize for the organisation in 1999, *"Silence has long been confused with neutrality, and has been presented as a necessary condition for humanitarian action. From its beginning, MSF was created in opposition to this assumption. We are not sure that words can always save lives, but we know that silence can certainly kill."*[50]

More than four decades on, MSF has grown from a small movement to the world's largest medical humanitarian NGO. It has developed increasingly rigorous processes, standards, protocols and guidelines to assure a quick and efficient response to emergencies on a global scale. Creativity and innovation, often with the frugal mentality of doing more with less, are still a strong part of the organisation's 'DNA'. But just as in all large organisations, innovation faces pressures and tensions. There is a basic paradox of large organisations seeking to innovate, when new ideas can challenge the organisational structures, mentalities and status quo. Leaders who are able to support innovation and thereby question their own source of power and legitimacy are few and far between, and this is a lesson that transcends any single sector or organisation.

But MSF also has unique challenges as an innovator, due to the nature of its mission and function. We exist to respond to crises and emergencies. We have a high level of structure and systematisation regarding how we respond as a medical organisation, but this means we have not traditionally had dedicated resources and appropriate competences for innovation – which creates barriers for undertaking and scaling up novel approaches. Furthermore, the emergency contexts can naturally prevent all responders – including MSF staff – from envisioning and realising improvements in how things are done, from both a short- and long-term perspective. To draw an analogy with a parallel sector, it is very hard for firefighters to innovate when they are in a burning building.

Over the past few years, as the attention paid to innovation has grown in MSF, and we find that certain issues and questions keep resurfacing in our daily work. Some might ask: *"How do we develop deep insight into what affected communities really need?"* Or, *"How do we get leaders to support innovation efforts?"* Some worry, *"How can we make innovation a natural*

part of our everyday work?" Others are pragmatic and direct: *"We need an innovative solution for this problem, and we need it very quickly."*

This diversity is symbolic of the different ways MSF staff are thinking about and operationalising the concept of innovation. Some want to develop an innovation strategy at the level of organisational leadership. Others are focusing on nurturing innovative mind-sets, behaviours and practices at the level of individuals and teams across the organisation. Some are interested in improving processes and practices, whereas others are primarily targeting the development of novel products, services and technologies. Some are eagerly expecting benefits in the short term, whereas others are patiently setting the stage for long-term impact.

In this article, we are not going to attempt to define innovation, nor is it our intention to represent the innovation perspective of the overall MSF movement, let alone the greater humanitarian innovation community. Rather, this is a story that details the origins of the MSF Sweden Innovation Unit, the 'why?' and 'how?' of our approach to innovation, and what we have learned so far.

Origins of the MSF Sweden Innovation Unit

In 2012, the project that would evolve into the MSF Sweden Innovation Unit was founded by MSF Sweden, one of 24 national associations in the global MSF movement. Each association is attached to one of five Operational Centres (OC).

There were several ideas behind the creation of the innovation unit. Perhaps most importantly, there was a clear requirement to more effectively address the needs, problems and opportunities related to the complex and long-term challenges that MSF was facing in operational settings. Doing this well meant engaging with and drawing from existing – but perhaps unexplored or underutilised

– resources and networks. Tapping into these had the potential to bring about new, different perspectives and competences.

For the MSF Sweden office, in particular, there was a strong desire to provide more direct support to MSF operations in the field, besides the traditional core areas such as fundraising, communication and human resources.

In parallel to these internal processes, there was an increasing awareness and dialogue around innovation within the humanitarian sector that provided an important enabling environment for the project and its work, giving it greater legitimacy and recognition.

MSF Sweden's Innovation Unit was created to explore opportunities to find a better balance between the urgent and the important, between the operational and the strategic, and between the systematic and the creative. In collaboration with other innovation-oriented partners, inside and outside of MSF, the objective was to play a catalyst role for humanitarian innovation. We wanted to make a tangible contribution to a sustainable innovation capability in MSF, as well as a recognisable process to explore and develop innovations that contribute towards saving lives and alleviating suffering.

Lesson 1: **Bridge the gap between theory and practice**

From an early stage, MSF Sweden Innovation Unit examined well-known innovation principles and practices, and sought to learn from what other actors in the humanitarian sector were doing – as well as relevant counterparts in the private sector and academia. With this starting point, and a strong design-oriented mind-set, we started to develop and test our own adapted version of a generic innovation process – one that could fit into the existing structures and culture of MSF.

This followed the same innovation management/design-oriented approaches that have been used by other innovation units, labs and networks in the humanitarian world. Like others, we emphasised specific processes moving from the identification of problems through to the testing and scaling of solutions. We placed a premium on cross-sector collaborations, a strong end-user perspective (with an emphasis on gaining deep user insight) and a belief in the value of iterative learning and prototyping.

We found that while these and similar mantras are prevalent in the growing humanitarian innovation space, leading to familiar language and concepts, there is still a long way to go to using these ideas in practice. After all, these concepts are only worth as much as we can practically make out of them. A great concept in theory can fail miserably in practice, not because it is inherently bad, but because there are a lot of contextual parameters that influence our ability to successfully implement our own strategies, processes and practices.

We have tried to bridge the theory-practice gap by framing innovation simply as a way of being more open and honest about the difficulties we face. All the innovation frameworks and approaches in the world are not worth anything if they do not help us with the basic task of asking critical questions of our practical crisis response work, and if they cannot be used to influence the way we look at the problems and opportunities we face. These questions include: Did things work as we had hoped? Is this approach still a useful one? Are our assumptions holding true? Is this relevant to needs and contexts?

As well as asking these critical questions, we also find it is vital to focus a range of perspectives on specific common challenges. When we work on a particular innovation problem, we always ensure there is a breadth of organisational representation – including different cultural and professional perspectives – as

well as diverse voices from outside the organisation. This also prevents premature consensus from being formed on the optimal way forward.

We also constantly adapt our methods and tools – from interviews and surveys to workshops – to the different tasks and challenges we face. Iteration and prototyping is not just a way of doing innovation, but key to how the MSF Sweden Innovation Unit itself works: we have to constantly trial and fine-tune our approach. Challenges such as lack of a field perspective or lack of available time from staff require a constant rethinking of priorities and innovation techniques. This leads us to spend a lot of time carefully considering the trade-offs that are inherent to any innovation and design process. For example, do we involve a whole department or narrow the scope of the problem? Do we spend more time researching a system or co-generating ideas?

Working in this way, it has become clear that a key strength of the MSF Sweden Innovation Unit has been our ability to balance everyday pragmatism with innovation principles that are sometimes hard to grasp. This balance has characterised the way we work and how we define our long-term strategy. But finding this balance is far from easy.

Lesson 2: **Balance short-term needs with long-term transformations**

One continuous challenge is whether we aim to establish innovation as a mindset and ongoing process or a short-term means of developing specific novel products or outcomes. The paradox is that aiming for a longer-term approach is hard to 'pitch' to internal and external stakeholders who are expecting a highly technical solution to be field-ready within six months or less. Aiming for a short-term approach limits the extent to which innovation is seen as a collective enterprise, instead of the work of a specific team or network.

This gap between the notion of innovation either as a driver for longer-term organisational and cultural change, or innovation as immediate results-driven problem solving is especially apparent because of MSF's emergency focus. While these notions could seem contradictory, we have learned that we need to provide a clear connection between meeting urgent needs and delivering on long-term visions. We also need to simultaneously meet the needs of field operations and head offices – and manage both incremental and radical changes, as well as many other trade-offs.

The most important aspect of this balance is to see each problem as an opportunity to solve both an immediate humanitarian challenge and to signal a broader message about the importance and relevance of innovation for the organisation as a whole. Whether we are involved in developing new sterilisation equipment, temperature indicators for the cold chain process, health information systems or implementing field studies on the treatment of conflict-related trauma wounds, we aim to provide 'immediate' results that are aligned with a long-term vision of sustainable innovation.

What brings various challenges and opportunities together is: their relevance (i.e. a strong field perspective), their potential impact (i.e. scaling up and diffusing), their feasibility (i.e. available support and resources internally and externally) and the underlying strategic message (i.e. what does this mean for the organisation as a whole?).

Lesson 3: **Use prototypes to accelerate learning and communication**

The toolkit of innovation practices can help a great deal, as long as we are able to use those tools appropriately in operational settings. For example, designers talk a lot about blueprints and prototypes. We have learned that the difference between the two is vital, and can help bridge the gap between different groups and generate consensus.

For example, in an ongoing process of developing an autoclave for surgery-related sterilisation in field,[51] we had to consider MSF needs as well as the needs of other NGOs, ministries of health and other relevant stakeholders. How could we provide a link between different actors with different needs? What are the common denominators and how do we filter the different requirements and criteria? Passing around a list of requirements was not enough, especially when communicating with stakeholders that are not used to looking at technical specifications. End-users and other vital contributors may provide great input but only if we speak their language.

To achieve this, we used the comparison of a construction project where the blueprint symbolises requirement specifications, while the scale model represents prototypes. Both are necessary, but they fulfil different purposes. We found that the technical aspects in the blueprints can be discussed by a limited number of people, but the scale model talks a more intuitive language that is more widely understood.

Prototypes also play an important role in this regard. Even if they cannot directly improve the situation of our patients or beneficiaries, as such, they represent progress and clarify a problem or a tentative solution for the stakeholders involved. They draw on needs and problem identification processes, which in combination with clear visualisations and other pedagogic tools, help clarify the complexity of a challenge and move people away from unsustainable 'quick-fix' solutions. Concept drawings,

renderings, mock-ups and other easy-to-grasp communicative 'prototypes' can be very powerful tools. They help us work collectively, to keep asking *"why"*, and to experiment and explore conflicting requirements in a physical manner. Prototyping allows a greater range of people to give their input, providing a vital participatory element, as well as a means of enabling both communication between different stakeholders and a bridge between immediate practical solutions and longer-term visions.

Lesson 4: **Keep close to operational realities**

In the end, the success of our work hinges on how closely we manage to align innovation with the everyday work of the organisation – and the closer to the field, the better.

Most people we engage with from field operations see our interactions as opportunities to share their valuable experiences and to take time and space to envision even better operations. Most people at MSF see increasing wellbeing, safety and the comfort of patients and medical staff as their priority. The solutions that deliver a tangible impact at any of these levels are the only ones worth taking forward.

Innovation-oriented work tends to interest and motivate people because it provides them with something outside of the ordinary daily tasks, as well as speaking to their intrinsic motivation as humanitarians. Better engagement with staff also increases the likelihood of success in projects. With small, but concrete actions, people begin seeing things differently and this is, in our experience, a great space for innovation. The frustration of daily challenges turns into friction that sparks motivation, and people not only start to think differently but also act and interact differently – not only in innovation projects, but in their day-to-day roles.

Lesson 5: **Focus on concrete and tangible actions**

We have also tried to elaborate and develop different participatory tools – such as our 'Now-Wow-How' workshop concept – that promote and justify engagement with different stakeholders. We find that it is important to engage openly not just with identifying the problem, and what solutions might be, but also with how pathways to change might come about. This can be defined as the sequence of concrete and actionable steps that key stakeholders in the innovation process can relate to and commit to.

Our Now-Wow-How, workshops allow people with different backgrounds and experiences to collectively explore the opportunities and needs for innovation in relation to a particular challenge or theme. From identifying the current situation, with a focus on 'challenges' and 'pain points' (Now), to envisioning a series of desired scenarios (Wow), the participants finally develop ways to move from the current situation to the ideal vision (How). This process is light and adaptive and focuses on tangible concrete actions – with a workshop only being the first of several activities.

Through this we have identified that continuous learning and feedback is key to innovation, and this is especially true the closer to the field we get. For example, the Now-Wow-How method was used for a field-based workshop on how to improve access to information for refugees in transition. The Now phase focused on uncovering the needs and challenges of refugees in transition, as well as those of the MSF stakeholders who strive to help them. (What information channels are currently available, and what are their advantages and disadvantages?) The Wow phase explored what types of outcomes would be desirable from the perspective of refugees in transition and MSF stakeholders. Finally, the How phase focused on creating solutions and proposals for achieving the desired outcomes. (What would the

products, services or processes look like that would lessen the information gap for refugees and MSF staff, and how can we move toward getting these identified, developed and tested?)

Lesson 6: **Build trust**

The road to innovation is difficult to predict and what started as one thing can unexpectedly change into something completely different. What seemed to be tangential at the start may turn out to be the core of a novel approach. We have learned that if we want to work together in pursuit of a common goal, we cannot be bound to particular themes, professional backgrounds or agendas. Instead we need to find ways of using adaptable and agile innovation approaches in combination with an extensive, competent and highly motivated network. However, working with research institutes, biomedical companies, universities, high-tech companies and a range of other diverse actors provides more than just practical challenges.

It is crucial to communicate openly from the beginning in order to set ambitions but also to further define and agree on concrete deliverables, time frames, role and task division, along with other practical matters. Without tangible stepping-stones on the path to a broader vision, a project will not work. We have also learnt that, when many different stakeholders are involved, which is almost always the case, we need to create trust through conscious acts of innovation diplomacy. This may not sound very radical or disruptive, but when moving into the unknown it is vital to have partners that you trust and which have proven themselves on previous occasions.

One example was the development of digital-based temperature indicators to improve the cold chain process for the transportation of medicines, vaccines and other medical products under controlled temperature.[52] We engaged with a university, a commercial company and a research institution in order to

form a constellation of relevant competences and resources. Together, we received funding that has provided an exceptional opportunity to iteratively prototype and field test products. Besides the different ways of working, organisational culture and incentives, there are fundamental identity-oriented differences between the unit and its external partners. We see this as very enriching, as we learn about how to clearly communicate what we stand for, alongside respecting the views of others.

Lesson 7: **Be principled**

As a part of MSF, a principle-based organisation, we need to make sure that our collaborations with external stakeholders are in line with our humanitarian and operational principles. These collaborations must not compromise MSF operations and the security of our staff, harm MSF's image and credibility, nor undermine MSF's objectives regarding access to health technologies and healthcare. In parallel to this, we are confronted with innovation-related practices that are relatively uncommon at MSF and in the humanitarian sector in general, such as intellectual property, patents, and confidentiality contracts. This is where we have to take a step back and be humble in our pursuit. We are constantly learning how we create trust, reach compromises and build foundations from where we can take larger and bolder leaps.

There is no perfect model for sustainable and fruitful collaborations with external and often commercial stakeholders. Success comes down to maintaining our integrity while simultaneously identifying and providing fair incentives to everyone involved. It is natural that collaborations have different stages and priorities, just as directions may change during the process, potentially disturbing early-stage 'honeymoon' relations and expectations. While maintaining flexibility, we need to be as

clear as possible from the beginning about our objectives, our principles and our identity. To deal with resistance during the process we implement process stages, with go/no-go gates. These initiate exhaustive discussions amongst all partners about how to balance the different values and priorities, needs and wishes. This means adaptations and renegotiations can be made in a constructive way. The unit, as opposed to the Operational Centres, keeps a degree of independence and a 'diplomatic' nature that allows these discussions to be handled in a practical way.

Conclusion

In conclusion, we come full circle to the initial question of what innovation means to us. Real and sustainable impact through innovation can only happen if it influences people to interact in a different and more proactive way. Individual innovation projects undertaken so far can themselves be viewed as prototypes or pedagogic tools in a larger innovation journey for the organisation.

We realised that we had to aim for clear and easy-to-grasp results – 'quick wins' – while keeping our eye on longer-term goals. If the end result of innovation and the value to the end-user, field worker or patient is too far in the future, people will lose interest. At the same time, we need to focus more on what is important, and not only to what is urgent. This requires constant adaptation and the involvement of other innovation units, labs and hubs, as well as the 'regular' parts of the organisation, in order to catalyse broader innovation capabilities. In addition, to gain traction, the social and cultural interpretation of innovation, as an ongoing process or mindset that needs to be integrated into everyday interactions, often needs to be embodied by physical innovations, such as products, mock-ups, prototypes, visualisations and other tangible outputs.

For us, the meaning of innovation is not the key issue. The key question is: what is the purpose of innovation? No matter how we choose to interpret it, a purposeful drive for innovation contributes to improving the situation of our patients and beneficiaries. MSF was founded on the basis of a novel and creative response to human tragedy, and we should ensure that innovation is at heart of all effective humanitarian work in the future.

What to take away from this...

- To secure organisational buy-in for innovative initiatives, it's important to achieve a balance between meeting urgent operational needs and improving ability to address long-term strategic objectives. An innovation unit needs to cater to the needs of both field workers and the head office.
- It is important to ensure short-term, visible wins for the end-user, field worker or patient in innovation initiatives to sustain motivation. Prototypes (for example visualisations, mock-ups and scale designs) can be important interim outputs of early-stage innovation projects.
- Organisations now have access to a range of innovation methods and tools to support everything from iteration and prototyping to user-testing. The role of an innovation unit can be to help the wider organisation to apply them, and to understand and clarify the trade-offs involved in different approaches (for instance the contrasting design approaches of blueprints and prototypes). MSF Sweden's experience suggests it's useful to take established methods and adapt them to one's own organisation, as in the case of the Now-Wow-How workshop.

How do you design an innovation strategy that works for your organisation? The International Rescue Committee set out how they went about selecting an approach, and the skills, resources, permissions, checks and balances required to make it work.

Rising to the challenge: designing an effective organisational strategy for innovation

Ravi Gurumurthy, VP of Strategy and Innovation and Jeannie Annan, Head of Research and Evaluation, International Rescue Committee.

How do you halve the time and cost of getting cash to flood victims in Pakistan? Instead of expecting families in South Sudan to trek miles to a clinic, how can we enable low-literacy community health workers to diagnose and treat malnutrition? If we applied insights from behavioural science, what would our programmes to reduce violence against women and children look like? The desire to design and test solutions to these challenges spurred IRC to create a new research and development team.

The decision was not uncontroversial. Over the past decade, aid agencies, development economists and donors have invested heavily in learning about what works through randomised impact evaluations, with the International Initiative for Impact Evaluation[53] compiling over 2,500 studies. A strong case could be made for investing in applying existing solutions from development, rather than designing new ones.

To assess where to target our own efforts, we conducted a detailed review of the evidence base. We set five organisational goals – education, health, safety, economic wellbeing and power – and defined 26 outcomes across these. For each, we developed

a theory of change and graded related interventions based on the strength of the evidence base contained in systematic reviews.

The results were stark. **First**, even in relatively stable, low-income contexts, we know remarkably little about how to reduce violence, improve governance, or employ adults. Many interventions have not been rigorously tested. Most tested interventions have shown limited impact. For example, there are now numerous impact evaluations of community-based reconstruction and development programmes showing little impact in strengthening governance. Skills training programmes, on which the World Bank alone spends nearly a billion dollars a year, have had limited impact on levels of income, or have costs that far outweigh benefits. We now know that microfinance, once lauded as an effective solution to poverty, has limited impact on levels of income.

Second, even in sectors where there is some evidence of effective solutions, many interventions only improve lives marginally. In children's education, while there is a growing body of evidence for a range of interventions, including scripting lessons, using computer-assisted learning, and employing contract teachers, at best the effect size is between 0.2 to 0.3 standard deviations, which is considered a small effect size by researchers. Most importantly, for the eight-year-old child that begins class with a reading speed of just 20 words per minute, it is often not significant enough to get them to a basic threshold of functional literacy.

Third, even where there are interventions that have a strong evidence base and the potential to achieve meaningful change, most are not in crisis-affected places. Fewer than 200 of the 2,500 impact evaluations have been conducted in crisis-affected

places, and there are good reasons to question whether the solutions would be transferrable at scale to crisis-affected contexts. For example, unconditional cash transfers are an effective alternative to transporting food and goods, yet in Pakistan, we found that it takes between six and eight weeks to reach the victims of floods, and 46 cents in every dollar is spent on delivering cash to recipients. Immunisation is another example. Huge progress has been made in ensuring children receive a full course of vaccinations. But innovation is needed in the delivery systems that can enable people to be reached in very remote locations with few clinics and without cold-chain storage.

In essence, there are huge evidence gaps, and where proven solutions exist, they do not have a big enough effect on people's lives, or face challenges in being taken to scale in crisis-affected settings.

Barriers to innovation

A focus on innovation is not new for IRC. The organisation was founded in the 1930s at the request of Albert Einstein to help Jewish artists and members of the intelligentsia escape Vichy France.[54] For decades, IRC and other humanitarian organisations have been improvising, taking risks, and finding ingenious work-arounds to deliver interventions that improve people's health and safety. In the 1930s, that meant the American journalist Varian Fry forging passports and smuggling people out of Marseille over the Pyrenees. Today in the Middle East, it means finding solutions for the 80 per cent of refugees who have fled to towns and cities rather than refugee camps. Innovation has been embedded in our work, in real time, in response to scarcity and extreme challenge.

Yet despite the creativity seen in the field, there are a number of barriers that inhibit deeper, more systematic innovation.

First, designing new solutions requires a concentrated dose of resources that can be flexibly deployed. Donors, both public and private – despite their interest in innovation – can tend to focus on end results rather than the means of getting to these. While innovation involves trial and error and experimentation, most grants are predicated on implementers projecting far into the future what they will deliver by when, with relatively little room for failure. The primary goal remains implementation, rather than learning. It is rare too for donors to fund the up-front research needed to generate new ideas.

Second, a linked problem is that innovation often requires a diverse mix of skills that can be challenging to fund and organise. For example, in developing a new way of helping community health workers diagnose malnutrition, we are utilising the skills of our local field staff, along with nutrition specialists, and a human-centred design consultant. To build and test the delivery system that will enable a solution to be scaled up, we will need to draw on those with supply chain experience, as well as researchers. In our work to reduce the time and cost of cash transfers, we are partnering with the private spin-off company of Give Directly, Segovia, to help us manage the workflow of cash payments, utilising a database of welfare recipients used by the Pakistani Government, as well as working with mobile payment providers.

Third, the daily pressures of having to respond to humanitarian emergencies limits the capacity of field staff to focus on innovation. Larger grants, with more immediate benefits and less risk, command more managerial attention than higher-risk, long-term investments in new solutions. By contrast, innovation work done by centralised teams far from the field risks being irrelevant to field realities. Indeed, some of the backlash against innovation is against superficially attractive, technology-focused solutions that turn out to be unfeasible on the ground.

Organising for innovation

The psychologist Mihaly Csikszentmihalyi once wrote that creativity involves a series of paradoxes: between naivety and expertise, divergent and convergent thinking, and between introversion and extroversion.[55]

In considering how we organise ourselves, the IRC has been conscious of maintaining some productive tensions: being close enough to the field to stay grounded, but insulated enough from the daily pressures that squeeze out innovation, and marrying deep technical expertise with people and methods that enable problems to be looked at afresh.

Our approach to these challenges is still in progress. We are setting up an R&D unit that will be part of the IRC, but will operate with some degree of autonomy. The aim is to be connected to the technical, research and field expertise of the organisation - incorporating over 12,000 staff and an annual operations budget of $700 million - but to be small, nimble and focused on sector-wide solutions that challenge the status quo. The mission is to design and test products, services and delivery systems that achieve a large effect and can operate at scale.

Rather than lay out a blueprint, we have begun a number of pilots to inform how we will organise ourselves. However, some important elements have already emerged.

First, we decided that dedicated resources are required to pursue R&D, rather than assume new breakthrough solutions will emerge in the course of business. This has required committing flexible funding and support from a number of donors including the UK's Department for International Development. Our aim is to build an R&D budget that will enable us to test ideas more flexibly than with standard project grants. If donors are serious about innovation - which, given the state of the evidence base, they

ought to be - they should be carving out a significant proportion of spending for R&D.

Second, while a dedicated team is needed, this capacity should be closely connected to the field. Competitions, calls for ideas, or other attempts to capture ideas have their place. But alongside this, more labour-intensive processes are required - involving interviews, observations and workshops with service users and frontline workers to define problems and test prototypes. To reduce transaction costs, our aim is to build field capacity for innovation in two geographical hubs that can enable us to generate and assess solutions in contexts with different levels of capacity.

Third, we want to bring a diverse range of skills to bear at different stages of the process. To do this, we are adding to our existing technical and research capacity, people with expertise in human-centred design, behavioural science and technology. Critically, we are also adding 'product managers' who can oversee a solution from design through to implementation and effectively manage the skills and the tensions between different perspectives. For example, standard problem-solving methods used by strategy consultants involve disaggregating problems and defining hypotheses at the outset, whereas a human-centred designer may often prefer to conduct generative research without prior analysis. Many innovation methods are 'lite' versions of traditional methods, such as ethnographic research. Finding the right balance between speed and rigor is aided by having researchers work alongside design staff, but somebody ultimately needs to be responsible for making the right trade-offs.

Fourth, within some implementing and donor organisations, innovation has emerged from ICT teams or fundraising, yet it is more fruitful to conceive of it in conjunction with research. The IRC was one of the first humanitarian agencies to invest

in rigorous evaluation, starting our first randomised impact evaluation in 2008. Since then, we have shown we can rigorously and ethically test interventions to determine what works, even in some of the most challenging settings. We have brought together great scientific learning with strong field experience to co-create and improve interventions. By bringing innovation and research together, both the design and testing of solutions will be improved. Rather than always designing on a blank canvas, which can be inefficient or lead to naive solutions, the design process will draw on rigorous evidence of what works and what doesn't in multiple sectors. And rather than leap immediately to an impact evaluation, we aim to ensure the method of testing is appropriate to the maturity of the project. Lighter testing will inform the development of solutions, and impact evaluations will only be conducted once a solution has been sufficiently optimised.

Fifth, while our aim is to enable solutions to be scaled through governments, private organisations and donors, by being a large implementing organisation, IRC has the potential to drive early adoption and bridge the gap between small pilots and larger roll-out. To enable this, the IRC has made a commitment in our new strategy to drive the adoption of new solutions through an Outcomes and Evidence Framework – with a commitment that all programmes will draw on the best available evidence.[56]

With more people displaced worldwide than at any time since the Second World War, humanitarian organisations have never been under greater pressure. Faced with unprecedented growth, the temptation is to replicate existing practice. But if donors and implementing organisations commit to finding new solutions, and harnessing new skills and partners, the sector as a whole – with all the ingenuity and passion of those on the frontline – can begin to rise to the challenge.

What to take away from this...

- Innovation is needed not just in products and services, but in the wider delivery systems of international development. The evidence for which interventions work best in addressing humanitarian crises and development challenges is deeply unsatisfactory.
- The nature of funding in the international development sector has inhibited the scaling of innovations. Organisations need to put in place significant dedicated resources for research and development - including learning and experimentation - alongside those designated for operational delivery.
- Innovation demands diverse collaborations between researchers, designers, sectoral experts, field workers, behavioural scientists and technologists. Product manager roles could help oversee solutions from design through to implementation and manage access to different skill sets. Maintaining close connections with field realities is essential.
- The research team may be a more effective home for innovation initiatives than the ICT or fundraising divisions, particularly if an organisation wants to ensure a well-judged approach to understanding what works.

This article draws from a longer interview conducted by Dr. Mariana Amatullo in November 2015 with Chris Fabian, Co-founder of the UNICEF Innovation Unit, based on insights from her ethnographic study of the unit.[57] *It shows how one of the most established innovation units in the development sector has worked to influence a large international bureaucracy.*

The balancing act of an innovation unit

Chris Fabian is co-founder of the Innovation Unit at UNICEF. Dr. Mariana Amatullo is co-founder and vice-president of the Designmatters department at the ArtCenter College of Design and scholar-in-residence at the Weatherhead School of Management, Case Western Reserve University.

Mariana: So let's start by talking generally about the role of innovation in international development. Do you think there is a sense of an 'innovation fever that has broken out'[58] and what do you think about it?

Chris: I would say that if there's an innovation fever I hope that there's some good medicine we can use to quell it. I personally don't care for the word 'innovation,' and I'm trying as hard as I can to not make it part of my vocabulary, because I think it's essentially meaningless. There is a danger that as soon as you have a Chief Innovation Officer, and build an organisational 'innovation strategy' you can get stuck in this kind of weird circle of logic where that person with the innovation title is the one in charge of doing things that are new, [whereas] other people aren't. 'Innovation' becomes an ambiguous buzzword that means everything and nothing. UNICEF Innovation's strength comes from our colleagues in country offices, our partners in government and [from the] private sector – and our job in the Innovation Unit, in many ways, is to act as facilitators and translators.

To counter this problematic set of misconceptions we have to get tangible. For example, the UNICEF Strategic Plan (2014-17)[59] is a foundational document for the organisation and its leadership. The plan includes innovation as a core element, and we have a number of clearly defined metrics. For example, in our country offices, we can measure how well our staff are working with local entrepreneurs, or how quickly they are gathering real-time data and getting that information back into government and into programming. We can look at measurements, such as how able our teams are to fail and how agile we can be in our planning processes. And finally, our strategic plan includes a measure of how much the organisation is working across country boundaries and across geographic regions and looking at moving solutions from one 'field' to another.

So those are some metrics, which we have 'baked in' to the core structure of UNICEF. That type of thing allows us to not say, 'Oh, it's about innovation', but instead it's actually about just doing our job better and doing our job differently. I think that it is very important not to get caught by fetishising innovation - and the shiny objects that can be associated with it – new gadgets and new gimmicks might make headlines but don't necessarily change the world. A lot of our job is really about making these huge organisations and structures be relevant to a different global context than what they were built for... and maybe... if they are not relevant in the next few years, understand how to gracefully bow out.

Mariana: So tell me about how the idea of acting as a learning entity within UNICEF, anticipating new circumstances, has shaped how the Innovation Unit functions?

Chris: UNICEF is a $5.5 billion/year organisation with 12,000 staff, 88 per cent of them in the field, in 190 countries.

The Innovation Unit functions very much as both a foresight unit trying to observe and anticipate trends. It works to help meet the demands that UNICEF sees for children, for the world's most vulnerable children,

and also as an agent of scale. This is important because as we all know it's easy to have a good idea, but it's hard to get that good idea into the organisational infrastructure of something as large as UNICEF.

Without support and buy-in from senior leaders in the organisation it's very difficult for a bureaucracy to restructure itself – even when confronted with a world that is reconfiguring its borders, populations and needs by the minute.

So ours is a constantly evolving unit. We've been around for about eight years now. But every 12 or 18 months we really change the shape of the team. That's both to be ready for what's coming in the future, but also to react to what we've learned in the 18 months before that. A lot of what we try to do is to be a translator between what's coming in the near future and traditional ways of doing business.

In the corporate sector that role is often clearly defined as a research and development role, with a budget and its own set of financial portfolios. But in an organisation like UNICEF, which is dependent on public funding and which also has a mandate, which isn't about making a dollar, it's hard to say exactly where that space for doing something new fits. In a sense, it's everywhere – and it is the job of every staff member to find and apply solutions from across fields to their work. In a sense, it's nowhere – because if you are working against a two-, or four-, or five-year roadmap of activities and can't change them, and can't adapt quickly, it's impossible to really improve. And we've been learning about this dichotomy along the way.

Mariana: Can you tell me more about the set of nine principles 'for innovation and technology development' (see Box 3) that have been widely adopted at UNICEF and endorsed by several other international development organisations? These align closely with tenets and practices of design thinking and human-centred approaches to innovation.

Box 3: Nine principles for digital development[60]

PRINCIPLES FOR DIGITAL DEVELOPMENT

The following set of principles represents a concerted effort by donors to capture the most important lessons learned by the development community in the implementation of technology-enabled programs. Having evolved from a previous set of implementer precepts endorsed by over 300 organizations, these principles seek to serve as a set of living guidelines that are meant to inform, but not dictate, the design of technology-enabled development programs.

ONE: DESIGN WITH THE USER

- Develop context-appropriate solutions informed by user needs.
- Include all user groups in planning, development, implementation, and assessment.
- Develop projects in an incremental and iterative manner.
- Design solutions that learn from and enhance existing workflows, and plan for organizational adaptation.
- Ensure solutions are sensitive to, and useful for, the most marginalized populations: women, children, those with disabilities, and those affected by conflict and disaster.

TWO: UNDERSTAND THE ECOSYSTEM

- Participate in networks and communities of like-minded practitioners.
- Align to existing technological, legal, and regulatory policies.

THREE: DESIGN FOR SCALE

- Design for scale from the start, and assess and mitigate dependencies that might limit ability to scale.
- Employ a "systems" approach to design, considering implications of design beyond an immediate project.
- Be replicable and customizable in other countries and contexts.
- Demonstrate impact before scaling a solution.
- Analyze all technology choices through the lens of national and regional scale.
- Factor in partnerships from the beginning, and start early negotiations.

FOUR: BUILD FOR SUSTAINABILITY

- Plan for sustainability from the start, including planning for long-term financial health, e.g. , assessing total cost of ownership.
- Utilize and invest in local communities and developers by default, and help catalyze their growth.
- Engage with local governments to ensure integration into national strategy, and identify high-level government advocates.

FIVE: BE DATA DRIVEN

- Design projects so that impact can be measured at discrete milestones with a focus on outcomes rather than outputs.
- Evaluate innovative solutions and areas where there are gaps in data and evidence.
- Use real-time information to monitor and inform management decisions at all levels.
- When possible, leverage data as a by-product of user actions and transactions for assessments.

SIX: USE OPEN DATA, OPEN STANDARDS, OPEN SOURCE, OPEN INNOVATION

- Adopt and expand existing open standards.
- Open data and functionalities, and expose them in documented APIs (Application Programming Interfaces) where use by a larger community is possible.
- Invest in software as a public good.
- Develop software to be open source by default with the code made available in public repositories and supported through developer communities.

SEVEN: REUSE AND IMPROVE

- Use, modify, and extend existing tools, platforms, and frameworks when possible.
- Develop in modular ways favoring approaches that are interoperable over those that are monolithic by design.

EIGHT: ADDRESS PRIVACY & SECURITY

- Assess and mitigate risks to the security of users and their data.
- Consider the context and needs for privacy of personally identifiable information when designing solutions and mitigate accordingly.
- Ensure equity and fairness in co-creation, and protect the best interests of the end-users.

NINE: BE COLLABORATIVE

- Engage diverse expertise across disciplines and industries at all stages.
- Work across sector silos to create coordinated and more holistic approaches.
- Document work, results, processes, and best practices, and share them widely.
- Publish materials under a Creative Commons license by default, with strong rationale if another licensing approach is taken.

For more information, visit DIGITALPRINCIPLES.ORG

Chris: These principles actually came out of desperation. By that I mean we typically don't usually know too much about what we're doing as we're doing it. But five or six years ago... we had seen a set of projects where half sort of worked and half didn't work. What all of these projects had in common was moving information via SMS. These were very early RapidSMS[61] projects.

As we saw those projects come out, one of our team members who was instrumental in starting a lot of our RapidSMS projects, Merrick Schaefer (who is now with USAID), noticed a pattern of what was working and what was not working, and we wondered how we could capture that variance – at least the lessons we were learning (or not learning).

There are many rules about how you should do development and ethical development and equitable development, but what we did not have until then was a set of findings about how you do this type of future search when you are looking at what is coming. And so the principles form the foundational guidance for us. At first there were four, then there were five, now they are nine.

Mariana: So, can you share some concrete examples that have influenced how UNICEF organises for innovation? Let's take the first principle: 'design with the user'.

Chris: Principle **number one, design with the user**, is very concretely learned from the notion that we don't build stuff in New York if you're building it for Zambia. This very simply means sitting down with somebody who is going to be using your product and [making] sure you are building something that is useful to them. This fundamentally speaks to the need for fair development of new infrastructure, or new technology, that really does reach most marginalised populations.

Let's move onto another, **number three, design for scale** - this is actually one of the hardest ones for me to articulate clearly and to quantify. But very basically

on a qualitative level, it is a reminder that when you are starting a new piece of work or a new project or a new investigation, you must make sure that you are building the initial parts of it in a way that if it does succeed – and of course success is by no means guaranteed – it can be replicated and grow. And if - or, more likely, when - it fails it can be learned from, adapted, changed, and tried again.

One measure of this principle would be how you project costs and returns in what are called 'economies of scale'. If your cost isn't reducing as you build more, that doesn't point to scale. But if you're building something where the conceptual prototype points to it getting cheaper as you build more of it, or getting easier to distribute as the future approaches, those are key pointers of scale.

Mariana: What about **number six, use open standards, open data, open source and open innovation?** How has this shaped the workings of the Innovation Unit?

Chris: It's still the most contentious of the principles in the list. Still the one that everybody wants to take out, and I think that is a crazy sentiment. 'Open source' is the biggest idea of our generation and it's the only thing that can guarantee that you can actually scale and manipulate a product after you start it. And so it drives me nuts that it still is the one that so many people want to pull back from, 'Oh, that one. Maybe you should water it down a little bit, just call it open standards.' No, I believe the projects that UNICEF is investing in should be always open source because we are creating public goods.

So I'm pretty proud of that principle, but it's still a fight sometimes. Interestingly, UNICEF has accepted this one, and you hear senior management talking about open source all the time. That's done and dusted. The fight that we hear is from new people who want to take on these principles – other agencies and other

organisations, particularly private sector partners. And they come up against us like, 'Oh, not that one. We're not going to open source. You could never make money from open-source software. No, no, no.'

And there it's very clear because people in [the] private sector – even [the] technology private sector – haven't understood the change that has happened around them: that you can still make substantial money from open-source initiatives. Look at RedHat, or Tesla, or any number of small startups that value their community more than their code… that it is the way of the future. It's interesting, the inside of UNICEF understands the practicality and the pragmatic necessity of open source. One great example is that of technology for emergencies. If you can't change the tech during an emergency, if you don't have control over it, you can put children's lives at risk. But those are situations where the contrast is turned up.

Mariana: What about the last one, **number nine – be collaborative**. One could argue that anywhere in the landscape of international development, collaboration is a given. So how does this influence innovation at UNICEF?

Chris: For me the collaborative principle… is almost a personal principle. It is very difficult for me to understand – there's sort of a human temptation, I guess, to be closed about your idea and you are like, 'This is my thing, I did this.' But the problems we are dealing with in development are so big that you cannot solve them yourself with any one team or any one agency or organisation or private sector group.

It is hard to measure how you are collaborative. There are many ways to fake being collaborative when you don't really want to be. But I think for us it just points to the type of people we want to work with. Maybe it's a metre-stick for hiring and for the people who come onto the team.

So we go out of our way to host other agencies, innovation teams, in our team. For us, it's sort of a position and a stance that we try to take, rather than something we can enforce on others.

And I think that there's a lot built in the bureaucracy, there are plenty of structures to prevent collaboration, whether vertical or horizontal lines and hierarchies or this idea of labels and silos, i.e. 'I'm in this section, you're in that section.' So there needs to be a lot of discussion about making collaboration... meaningful and intentional. There's a new way of working that is not about, 'I'm a health person and you're an education person, so we shouldn't talk.'

Mariana: So how does this play out for that very concrete idea of who you hire and fire? You seem to privilege multidisciplinary expertise and you are very intentional about hiring designers in strategic roles as part of the mix.

Chris: We go out of our way to bring together people in from different thought spaces around issues that maybe they wouldn't be very comfortable with, and to be very open about the disruptive nature of that work.

It is worth articulating that when we are hiring there is a set of UNICEF staff contracts that are in keeping with the norms you would expect if you come into the UN system. They offer pensions and benefits and you are an international civil servant, etc. In the Innovation Unit, we often hire on consultancy contracts. So our whole team is actually on a much lighter contract. It is not totally fair and it is something that I don't like, but we try to give everyone as much equality as we can.

But these are people who are hired on contracts that don't guarantee you a future with the organisation, retirement in 2045, a 30-year bureaucratic runway. I also think even the way that we have constructed our hiring process has been out of a desperation for agility and need to be able to hire people with different sets

of skills – and design is indeed one of the core ones – than the normal UNICEF interview process would reveal, and hire people that maybe don't want to stay with the organisation for more than a few years, but are excited about moving on and finding their next great thing.

I would just highlight that as well because I think we can't hire within the normal UNICEF system as well as I'd like to be able to.

Mariana: Another nuance of your human capital distribution is how many innovation programme folks at UNICEF are actually not in the Unit of budgeted personnel in your staff, but individuals in other divisions who are serving in these roles. Can you say a little more about how that happened and how this hybrid structure, which seems to point to both cost-efficiencies and sustainability, came about?

Chris: I think it goes back to this discomfort with the word 'innovation.' If you count our staff in the innovation group in UNICEF, our team is comprised of five people. There are five staff members. Everybody else – amazing people – are on 'non-staff' contracts. We put a lot of trust and support behind them, or they are people coming from, and paid for, by other parts of the organisation.

We wanted to take this approach so it's inclusive, but also so that we are able to bring in a diversity of skills: the skills of a data and research person, or of a Polio person, or a great event organiser. And that goes to this kind of interdisciplinary collaboration notion. In our open space we often host people from other parts of the organisation or other parts of the world as they come through. And now we have a little wall up of visitors, and we have their faces and some stuff about them.

It's just amazing to see the type of transference of knowledge and of experience and have people argue, 'It's much harder to do something new in my country

than in yours,' and have those arguments play out. And that's really, really good for the team because it's not about a small group of people who are uniquely situated to see the future, which is a terrible way to do innovation, but it's about an organisation that really does have a lot of people struggling with the same issues.

Mariana: In my ethnographic study, urgency emerged as a key factor accounting for the uptake of innovation at UNICEF overall. Can we close with some thoughts on the sense of urgency that drives the work of The Innovation Unit?

Chris: One thing that worries me is if you have this discussion about speed in the world today and there's a whole set of people who are like, 'We had the same discussion in '60s. The world seemed like it was falling apart then, and humanity survives. We persevered. We're going to carry through. We went through it.' I just don't think that's true anymore. I think that the problems that are coming our way now are closer to the level of existential risk for humanity. Just look at the climate or look at the kind of broken education systems throughout the world.

I think that feeling is shared by a lot of people in the team and a lot our partners that we work with. And if that's not a motivation to get up to work every day, I don't know what is. But the question is how you can construct that speed within an organisation that is purposefully built like any big bureaucracy to not have quick changes. It's like you can't turn the Titanic on a dime, we know that. But I don't think the world is about a bunch of Titanics anymore, and it's not about these big ships moving in a preordained way. And we've melted most of the ice.

Mariana: It is worth pointing out that you are confronting these gnarly problems with an equal sense of optimism, remaining aspirational about an alternative future that we can all contribute to shaping.

Chris: Yes. One of the things that we really try to do is just to build shipping lanes. Just to build the space so that if you want to take an oil tanker and send it down the lane that's fine, but if you've got these small, little speed boats that are zipping along, at least the purpose and the place is clear in the organisation.

So those lanes – those areas of exploration – have to be aligned with the needs of the organisation and the discourse of the organisation, while still making things happen right behind that alignment that might be a little discomfiting. Doing that in ways that don't make you the bad guy is one of the many balancing acts of managing innovation in development.

What to take away from this...

- Working together on innovation requires a set of clearly-defined metrics and principles that are integrated into the organisation's core structure, otherwise there is a risk of the word innovation becoming ambiguous or even meaningless.
- For UNICEF those principles include designing with the user and designing for scale. The Innovation unit can play a supporting role, but those ways of working need to be embedded throughout the organisation.
- Ensuring the right skillsets for innovation may require a more flexible approach to hiring and contracting than the organisation is used to.
- It's an important balancing act to work within with the needs and discourse of the organisation, while still making uncomfortable and radical things happen.

Part three: **How to harness new partnerships and collaborations**

IKEA Foundation

A multinational company's view on how to make collaborative approaches work, the challenges to expect and the strategies to overcome them

DFID Innovation Hub

Experiences and lessons from developing novel networks and partnerships with actors outside the traditional development sector

Global Giving

Rethinking the relationship between aid givers and recipients, and building a new kind of market for aid funding

Humanitarian Innovation Fund

Drawing on experience from over 65 funded projects, HIF share lessons on how to be more strategic when attempting to collaborate to support innovation

When one looks across the meaningful innovations that have changed how international development works, from microfinance and cash transfers to vaccines and malnutrition treatments. They have all, without fail, come about because of an open and collaborative mentality. Collaboration is increasingly not a 'nice to have' but a 'must have' in development innovation.

People have formed coalitions that spanned organisations, and come together in their common pursuit of doing development differently and better. Indeed this very notion underpins the whole philosophy of Global Giving, an innovative platform for aid-giving that cuts out the usual 'middle-men' of aid work.

Successful collaboration often requires both detailed preparation and constant negotiation. As the essays here tell us, there are some important pointers worth bearing in mind. First, the **rationale for collaboration** needs to be clear, with a sense of relevant competencies that will be brought by different actors. This should not be based on a vague notion of being as open as possible: when bringing in unusual suspects it must be because there is some resonance with the problem at hand. Notions of 'parallel innovation' are especially important here. Some examples from the HIF contribution include humanitarian shelter innovators learning from top-end material scientists, and refugee camp water and sanitation specialists learning from civil engineers.

Second, it is vital to establish **common ground between would-be collaborators**. As the DFID example shows, this is often through the careful selection of challenges that capture the interest and engagement of the possible collaborators. Sometimes this will be triggered by a burning question that has the power to convene disparate groups and get them thinking

together. For example, how can we improve the ways in which we provide water services in slums? In other situations, it is an enduring gap or problem in existing services: for example, why is gender-based violence an ongoing issue and what can we come up with to better tackle it? Finally, in some cases, it may be about exploring the potential of the solution or technology in novel settings: for example, what might digital technologies bring to enhancing disease tracking and response?

Third, innovation brings up many **opportunities and costs** for different actors involved, and these are seldom perfectly aligned, as the IKEA Foundation and Better Shelter case study show. Effective collaborations don't shy away from the difficult questions of how to mediate, resolve and manage competing interests for resources. Setting expectations early, using effective contractual agreements, and early determining of the model by which innovations will go to scale, are all important aspects of such negotiations. Here one common challenge is that different stakeholders will have different notions of 'success'. Humanitarian and development organisations may look for results in and of themselves; Private sector actors need a sustainable business model if a collaboration is to go beyond corporate social responsibility; and governments may need to meet accountability requirements and respond to political pressure. There are all kinds of issues of organisational culture, of language, of perception, of incentives and payoffs that need to be tackled – and it is clear from across these essays that effective collaboration doesn't deal with these as an afterthought but as an up-front consideration. Successfully navigating and negotiating these interests is essential for a more sophisticated and mature approach to collaboration for innovation.

But in all of this, it is important to remember that collaboration is ultimately about people and human relationships. Most successful collaborations are not a result solely of formal processes, principles, project structures or funding agreements. Rather, they build and rely on informal connections and trust between the people involved – and their passion and willingness to put institutional affiliations to one side for the sake of achieving development goals.

This essay examines how the Department for International Development (DFID) is developing novel networks and partnerships with actors outside the traditional development sector in order to better inspire, enable, manage and scale innovation. It clarifies the scale of the opportunity, but also the nature of the unforeseen challenges involved..

From Britannica to Wikipedia? How traditional development actors are catalysing collaboration for innovation

Jonathan Wong is Science, Technology and Innovation Adviser at the United Nations, and the former Head of the Innovation Hub at DFID.

Introduction: The landscape for development innovation is changing

Coming into the development sector in 2012, with a background in health and private sector innovation, I was immediately struck by the level of change and flux apparent in the system. Nowhere was this more apparent than in the rapidly growing cast of development actors. In setting up DFID's first innovation hub, I found myself engaging with a number of 'new players' – many familiar to me from my previous roles – actively engaged in the exploration of how they might add to, and gain from, solving development challenges. Four kinds of actors really stood out in terms of their potential contribution, from my perspective.

There were foundations and impact investors looking to support innovation and technologies that have the potential to deliver both high social impact and economic returns. A JP Morgan report estimated that the potential capital market for this kind of investing could grow to $1 trillion[62] – a potentially vast source of

new financing that could be mobilised in support of development ambitions.

The design and creative industries were also exploring how their skills and expertise could have an impact in the developing world. At the same time, many business professionals were no longer just aspiring to work for large corporations for financial gain, but wanted to start enterprises with an ingrained social purpose. Some of the most promising development innovations I observed were being pioneered by commercially sustainable social enterprises that aim to deliver positive social change.

There was also a growing movement of large corporations seeing the benefit of social impact beyond just corporate social responsibility (CSR). This movement is been driven by socially-minded CEOs and social entrepreneurs within large corporations developing new products, services and business models that make sound business sense, as well as delivering social benefits.

With the proliferation of mobile phones in the developing world, technology also presented the opportunity to engage at scale with those poor communities the development sector is trying to help – to articulate problems, develop solutions and get real-time feedback. Technologists, large and small, were also actively seeking new opportunities in the development sector.

On reflection, looking across these groups, I sensed that none of them had made the positive contribution that their skills and capacities promised. Despite the enormous possibility for private investors to provide the capital to scale-up game-changing development solutions, today that potential is not yet realised. Design and creative professionals are arguably spending more time engaging in aid delivery problems than endgame issues facing communities in developing countries. There is not yet a strategic approach to how development organisations engage

with the private sector for innovation. It is ad hoc and piecemeal. In order to exploit the opportunities this rapidly changing landscape provides, it is clear that new ways of stimulating innovation and new models for effective collaboration are urgently needed.

This is not a new argument. There has been a lot of talk in the development community about the need for collaboration between a diverse range of actors. This has been further emphasised in the United Nations Global Goals for Sustainable Development (Global Goals) which includes an objective to 'strengthen the means of implementation and revitalise the global partnership for sustainable development.'[63] However, from my experiences in innovation, I have learnt that it is easier to call for such collaboration than to make it genuinely happen. To paraphrase the old joke about relationships, collaboration is hard work, and that's just when it is going well. However, I have found that we can make them easier – although seldom easy – by understanding the major sources of challenges. From my perspective, these are threefold.

The three big challenges for effective innovation collaboration

For the actors I described above, **language and culture** are key issues. For example, while the development community talks in terms of development outcomes achieved and lives improved, corporations articulate success in terms of the bottom-line impact on profitability. More critically, each of the communities above have their own way of seeing the world, culture, mind-set – and dare I say it – jargon. Without more effort to find common language and ways of seeing, fruitful collaboration risks get stymied in unnecessary confusion and conflict.

Narrow assumptions also matter a great deal when it comes to collaboration. The development community has traditionally been distrustful of the private sector mentality, design thinkers have spent more time working on First World problems, and impact investors have a reputation for focusing on over-simplistic solutions. These implicit assumptions can shape and limit whose voices and ideas are trusted. Not only do such assumptions inhibit genuine creativity, they can also make collaboration uneven, with certain actors given prominence over others in the search for novelty.

At a more strategic level, goals and ambitions are often divergent, and it can be hard to find the middle ground without negotiation and dialogue. But while the intent to collaborate between a range of actors with shared objectives may be present and clear, **effective mechanisms, processes and platforms to facilitate innovation collaboration have often been noticeable by their absence**.

Our efforts to deal with these challenges

There have been numerous examples of DFID attempting to navigate these challenges to forge genuine collaborations for innovation. This has meant reaching out to new actors, developing new mechanisms to facilitate new kinds of conversations, and rethinking relations with existing partners. Below, I share some examples of how we have tried to do exactly this.

Speaking the same language

Through our investments in Water and Sanitation for the Urban Poor (WSUP), DFID has sought to support a global partnership between the private sector, NGOs and research institutions focused on solving the enduring problem of inadequate water and sanitation in low-income urban communities. WSUP focuses

on developing commercially viable models to help water utilities and municipal authorities reach all citizens in their city with improved water and sanitation. To date WASUP has provided 1.86 million people with improved water services, 760,000 people with improved sanitation services, and 5.75 million people with improved hygiene practices.

The 'recipe' for fusing skills from diverse partners has been pivotal in bringing this social enterprise to scale: the private sector bringing commercial awareness, NGOs bringing development expertise and research institutions bringing academic rigour. The project has been successful in developing shared articulations of success by working collaboratively from the start – from the problem definition through to the design of an intervention and its evaluation.

To date, WSUP has positively affected the lives of millions but to meet the ambition of the Global Goals to provide universal access to all, the key challenge will be scaling-up. WSUP will have to collaborate even more closely with utilities to identify and implement solutions that contribute to citywide service provision, and ultimately to national-level improvements.

A powerful example is reducing levels of 'Non-Revenue Water' (NRW) – the amount of water a utility produces for which it receives no revenue, either because of physical losses (e.g. a leaking pipe) or commercial losses (e.g. unpaid bills and illegal connections). In 2008, WSUP signed a professional services agreement with JIRAMA in Madagascar, the national water utility, relating to service improvements in the capital city Antananarivo.[64] WSUP agreed to provide capacity-building assistance, with a particular focus on reduced NRW, in return for a commitment to improve service delivery to the city's low-income areas. They have since seen a fundamental shift in JIRAMA's approach and recognition that low-income areas form

an important part of their customer base. This has translated into vastly improved outcomes for low-income consumers: over a half a million people have benefitted from an improved water supply since the partnership began, with water now available 24 hours a day in many of the target areas – up from just three to four hours a day previously.

Capacity building isn't very sexy, but it really changes people's lives for the better. In achieving universal access, it will be interesting to see if WSUP can build on the Madagascar success by shifting towards collaborating with local utilities to maximise impact.

Effective platforms for innovation collaboration

It is vital when fostering such partnerships that diverse perspectives and insights are integrated and managed effectively. It becomes almost a rule of thumb: those partnerships that invest in common approaches and mutual learning at the outset are precisely those that can navigate the unexpected storms that

might strike later on in the innovation journey. But there is still a lot of work to be done in terms of sourcing new ideas from fresh perspectives – and finding ways to make development more accessible and collaborative.

Working in partnership with the human-centred design firm Ideo.org, along with OpenIdeo, DFID's Amplify programme is about doing just that – it's a way of experimenting with the process of identifying innovative solutions to stubborn development challenges. It will tackle ten development challenges over five years using an open, collaborative design process, and will provide funding and design support to the most promising solutions from each of the ten challenges.

Amplify works by crowding in as many voices as possible – for insights, feedback and fresh thoughts, as well as proposals for solutions. The programme works by setting a challenge to OpenIdeo's online community, a platform of over 50,000 participants. The participants then work through a four-stage design process, tackling the challenge in phases, from research, through to an open call for ideas, into shortlisting and refinement, and finally evaluation and funding.

As many of the people we are seeking to help are not 'connected' or digitally literate, we realise that technology alone cannot reach the communities we aim to target, so we will have to consider how we use low-tech solutions (such as radio), workshops and networks of volunteers to draw on the insights and ideas of communities that can't get online. This will ensure that we consider the voices that matter the most.

Asking the right questions

Despite the diversity of actors, I think that it is possible to ask incisive, burning questions that can support the search for common answers. Such questions are not always easy to define,

and may need to be developed collaboratively. But developed well, they can be a source of shared motivation and common strategic approaches.

There are a number of questions that my team has focussed on including: 'How to spread the inherent risk of innovation across different groups? How to move innovation at a scale and pace beyond which any one of us could do alone? How could we bring our diverse insights together to understand and solve development challenges?'

A great example of an initiative that has been based on exactly this kind of hard questioning is the Global Innovation Fund (GIF), a partnership launched in 2014 between the UK, US, Swedish and Australian Governments and the Omidyar Network.

Borrowing from the experience of venture capital, GIF offers three stages of financing to pilot, test and scale innovations.[65] GIF supports innovators who are committed to using and generating rigorous evidence about what works, and invests the largest funding amounts in innovations that can demonstrate evidence of success and that have potential to spread across multiple developing countries. A not-for-profit organisation headquartered in London, the £125 million fund will invest in social innovations that aim to improve the lives and opportunities of millions of people living in poverty in the developing world. GIF seeks innovative solutions that can scale-up commercially, through the public or philanthropic sector, or through a combination of both, in order to achieve widespread adoption.

GIF is an exciting example of an innovation platform that funders can invest in. The intent is that by bringing financial capital together, GIF will have the resources to grow proven concepts to widespread adoption by crowding-in resources from partner governments, private investors, foundations and donors to

support solutions that are proven, scalable, and offer more value for money than current practice. In order to unlock social and commercial investment and scale commercially, GIF will also support innovations through the funding 'valley of death' – that is, the funding gap between early-stage donor grant funding and seed-capital, and mid-to-later stage social and commercial investment. It will do this by providing funding to get innovations 'market-ready' and to an investable state, and by brokering more systematic links with social impact and commercial investors.

It is early days, but thanks to an open process of dialogue, discussion and debate, GIF has turned from a small spark into a new initiative with global reach, ambition and scope. It is grounded in the belief that good ideas can come from anywhere and anyone, and I would like to think that GIF's development was based on these exact same principles. A critical challenge to overcome in the future will be how to deal with failure. Innovation inevitably involves the risk of failure. A venture capitalist expects and accepts failure; however, the strategy is that individual losses are balanced by the success of the overall portfolio. My view is that to meet the ambition of the Global Goals and to deliver even more value for taxpayers; innovation is not a nice to have, it's essential. Fortunately GIF's funders agree. This raises some key questions: How can donors prudently manage risk? Can donors sustain a portfolio view of their investments and explain reasonable failures in an environment of accountability to the taxpayer? To manage this risk, GIF has the following key design features:

- A stand-alone organisation: At arm's-length from the donors, isolating and incubating the inherent risk of innovation.
- A multi-partner model: 'Crowding-in' donors, foundations and private investors to spread the financial risk of innovation and provide multiple channels to scale through donor, philanthropic and private channels.

- Staged-financing model: GIF offers three stages of funding with the amount of funding increasing commensurate to the evidence of cost-effectiveness and impact. This model ensures that, if innovations fail, they will do so quickly and cheaply.

Conclusion

We've worked hard to develop platforms and initiatives – like WSUP, Amplify and GIF - to support a broader base of innovators, entrepreneurs, technologists and designers to apply their skills to development challenges and to use approaches to stimulate innovation that are different from current development practice.

I'm looking forward to seeing whether they are successful in developing more relevant, impactful, cost-effective, sustainable and scalable solutions. What is certain is that new approaches are required to exploit the potential of the rapidly shifting innovation development landscape. Such approaches will not be easy – they will require our collective ingenuity, sweat and tears. What is certain in my mind is that in moving toward greater creativity and experimentation, regardless of sector, the most fundamental step is in rethinking how we relate to each other. The truth of this is borne out by the lessons from all of the most significant development innovations to date – from direct cash transfers to microfinance. They have involved a diverse range of skills, expertise and ideas from a range of different actors. Partnerships for innovation are not just nice to have; they are a must-have.

Ultimately, I think this means moving towards a model of open-source development: less like Encyclopaedia Britannica and more like Wikipedia – where we spend less time creating and delivering, and more time facilitating and curating. The burning question that remains is whether we can really turn international development into the creative, dynamic venture that it so clearly needs to be.

What to take away from this...

- There is a new landscape of actors working in development, which requires new models for effective innovation collaboration. The most successful development innovations to date have involved a diverse range of skills, expertise and ideas from a range of different actors.
- It is easier to call for such collaboration than to make it happen in practice. In order to avoid confusion and conflict, there needs to be more effort to find a common language and ways of seeing things.
- Partnerships should invest in common approaches and mutual learning at the outset, in order to avoid unhelpful assumptions about other actors, and to ensure that diverse insights are integrated and managed carefully.
- Effective mechanisms, processes and platforms need to be in place to allow negotiations and dialogue between partners to take place when discussing goals and ambitions, to enable them to agree on common strategic approaches.

By rethinking the relationship between aid givers and recipients, GlobalGiving challenges the intermediary organisations that have traditionally dominated the sector. This essay tells the story of how GlobalGiving created a marketplace for aid, and why this could be a business model that drives the future of international development.

Making markets work for aid

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Just make them stop protesting!

In 1999, the World Bank's recently created New Products team asked the organisation's president how he would measure their success. *"How many new products do we need to produce?"* they asked. *"I don't care,"* he replied and pointed out his window to a large group of people gathering with signs on the street, *"as long as people stop protesting against us in the streets."* The team looked out the window and saw a banner unfurl. It read '50 Years is ENOUGH.' The president said, *"I don't agree with everything they say, but they are right that we aren't delivering what we promise."*

After decades of urging client countries to structurally adjust their economies to be more productive and innovative, the World Bank had ironically failed to heed its own advice; its operations had more in common with central planning than with the market economies it sought to support. Since the founding of the Bretton Woods institutions in the 1950s, most international aid had operated with top-down logic, an approach based on the notion that experts were best positioned to analyse countries'

challenges, design proper solutions (projects and reform programmes), fund the implementation of those solutions, and then evaluate whether those solutions worked. Hence, institutions such as the World Bank, UN, bilateral, and large foundations made sense because they concentrated the best minds and combined them with the bulk of the resources.

While there may have been some justification for this approach in the aftermath of WWII, it was increasingly clear that this closed loop, self-referential system was not working well. The harshest critics argued that the returns to aid were zero or even negative; others argued that returns were slightly positive. But almost no one argued that the returns were high (with the possible exception of some health sector aid). After 50 years, it had become clear that big aid agencies and foundations were falling far short.

The New Products team members were stunned into silence by the president's charge to them. They had just spent the last several months developing elaborate bureaucratic mechanisms to generate, analyse and evaluate potential new ideas. But it was now obvious that what they were doing would be marginal, and not bring about fundamental changes. They didn't need a few new products – they needed a whole new system for generating products. So they went back to the drawing board and asked, *"What would the World Bank be like if it underwent its own structural adjustment and followed its own advice?"*

After much debate, they decided to forsake a cautious bureaucratic 'options paper' approach and instead simply create a way of allocating resources that mimicked an open economy. They sent an email to their country offices announcing a pool of $5 million to fund poverty-fighting ideas; any group in the world

could apply for it. Finalists would be invited to pitch their ideas in-person at the World Bank in early 2000, with funding decisions made by jurors not only from the World Bank but also the private sector and civil society. Instead of keeping the protesters out, the World Bank would literally open its doors for two days and invite the protesters (along with everyone else) in. The New Products team called this event the Development Marketplace.

Many of their colleagues belittled the idea. So entrenched was the bias in favour of experts that a colleague bet the team a luxury car that they would not be able to find more than a handful of innovative community projects to fund. In the late 1990s, most of the world didn't have reliable internet access and even the most global institutions, including the World Bank, had little direct reach into the communities they sought to serve. Despite these challenges, over a thousand ideas were submitted to the Development Marketplace in only five weeks. Of these about 40 were funded, with a total amount of $5 million, at an in-person, two-day pitch event at the World Bank in early 2000.

The Development Marketplace revealed an abundance of good ideas, insights and energy from outside the World Bank's walls. But an even more fundamental insight came at the very end of the event. After the awards were presented in the Bank's atrium, a woman from South Africa approached the Development Marketplace team and said, *"My idea was not funded, but from talking with others here, I can see how to make it as good or even better than the winners. When can I re-submit it?"* When she was told it would be at least another year, maybe two, before they repeated the event, she replied, *"Why should I have to wait an entire year? And, why should the World Bank be the only funder I can ask for support?"*

GlobalGiving and the birth of the secondary market

The above questions haunted the two leaders of the Development Marketplace, one of whom is an author of this piece. Due to the Development Marketplace's success, its leaders were promoted rapidly inside the World Bank's bureaucracy, but the faster they were promoted the less able they were to respond to the South African woman's demand for what was essentially a new way to intermediate funding for aid initiatives. So those leaders decided to leave the Bank and create the first-ever online aid marketplace. Anyone in the world with an internet connection would be able to submit a project for consideration, and anyone in the world would be able to consider it and possibly fund it.

GlobalGiving was conceived as a 'wisdom of crowds' approach that would depend on the collective judgment of large numbers of small donors and project leaders to make (on average) good decisions about resource allocation. When GlobalGiving launched in 2002, 'crowdfunding' was not yet a word. Only one other similar site (DonorsChoose, restricted to the funding of US public schools) was operating. Furthermore, the GlobalGiving team decided that, to ensure it provided valuable services to its users, it should over time be self-supporting, through revenue generated from transaction fees and related services.

Not surprisingly, the early years were challenging, with slow growth in users. The initial site enabled people to contribute advice, knowledge and experience, as well as money. But it quickly became clear that, without liquidity, the site could not generate the revenues it needed to survive. So a few years after launching, the team took the painful decision to focus sharply on financial intermediation and phase in knowledge intermediation later as finances permitted.

The narrowed initial focus paid off, with over $200 million flowing from half a million small donors and private companies to 14,000 projects in 165 countries over the past decade. The liquidity and large number of users and transactions came about from an intense focus on user needs and incentives (see below), and from a continuous stream of innovations and efficiency gains that allowed GlobalGiving to operate on a global scale with less than 50 staff – all while charging less than half the fees that Apple's App Store charged developers. And importantly, a decade after launch, GlobalGiving achieved financial sustainability by generating enough revenue to cover its core operating costs.

Post-disaster philanthropy is one area where the power of crowdfunding is particularly clear. As large international aid groups, such as the Red Cross, are put under increasing scrutiny about how they spend disaster relief and recovery funding, local groups working in post-disaster environments are increasingly getting the visibility and funding they need to focus on the long-term rebuilding of their own communities. In the first 60 days after the April 2015 earthquake in Nepal, for example, more than $20 million had been donated for relief and recovery efforts through crowdfunding sites.[66] Through GlobalGiving alone, donors in 2015 gave more than $5.5 million to mostly grassroots earthquake relief and recovery efforts in Nepal, almost $3.5 million for Ebola-related efforts in West Africa since mid-2014, and more than $12 million dollars to support relief and recovery after the 2011 earthquake and tsunami in Japan. These numbers are beginning to signal a significant shift in where and how money flows through the aid system.

However, these numbers belie the systemic impact. Since GlobalGiving's founding 14 years ago, more than 100 online 'social good' platforms have launched, with hundreds of millions

of dollars being transacted each year. The effect of the expansion of who gets and gives funding is palpable in the aid sector. Newer sites such as Kiva have adapted the GlobalGiving model to adjacent niches such as microcredit. (KickStarter, IndieGogo and related sites have focused on commercial startups, and it is now commonplace for the development of new products in commercial markets to be funded on those platforms.)

With this disintermediation of aid, new players are increasingly able to receive funding from donors around the world in a way that just wasn't possible two decades ago. Today, aid flows are no longer solely dependent on the official aid system, and large international NGOs and for-profit development contractors are not the only players able to receive funding. At the same time, new types of donors can support local solutions anywhere in the world and be connected in a way that was never before possible outside of one's local community.

Incentives, incentives, incentives!

When GlobalGiving first launched in 2002, the team assumed that a donor demand-driven model would drive traffic and ensure good ideas got funded. The assumption was that donors would flock to support the best projects, and that demand would in turn spur more 'supply' of projects in a self-reinforcing dynamic. The team quickly discovered, alas, that few donors regularly search the internet for innovative social change efforts they can financially support. So to address the donor demand issue, the team turned to behavioural economics to learn how to best incentivise giving.

First, the team discovered what should have been obvious, but was the opposite of conventional 'aid system' wisdom: good organisations in developing countries are their own best advocates, and that simply providing access can unleash

tremendous creativity and initiative. Organisation leaders who list their projects on GlobalGiving can talk about their work and inspire donors with a passion that no external group can achieve. GlobalGiving learned that they could best unleash the latent potential of organisations by: 1) creating the tools necessary to allow those groups to tell their own stories, and 2) providing training and support to let them grow their own donor networks. Moreover, they structured the platform to inspire donors to give, for instance, by creating a sense of urgency through creating giving deadlines, providing bonus prizes, or matching donations given through the GlobalGiving website.

GlobalGiving learned it could also encourage donors to give more money (and do this more frequently) by applying principles from behavioural economics to the giving sector. In 2011 and 2012, the team worked with Michael Norton, at the Harvard Business School, and Dan Ariely, at Duke University's Fuqua School of Business, to double the likelihood that a donor will upgrade from a one-off donation to a monthly recurring donation. They did this by conducting experiments on contingent match incentives that rely on social proof – the idea that a person will act based on how others are acting. Other experiments have allowed them to increase the probability that individuals who use GlobalGiving's search function will follow through with a donation.

As the network of non-profit organisations on the site grew, GlobalGiving began applying additional behavioural economics principles to incentivise learning. In 2011, the team introduced the Partner Rewards Program.[67] Similar to an airline's frequent flyer programme, they gave organisations points for increasing their engagement with their platform, particularly focussing on how well they reported to donors on their progress and challenges. A higher reward status (partner, leader and superstar) translated to increased visibility to donors and access to corporate funders. In

the same way regular consumers might be motivated to purchase their next ticket from United Airlines because they are only 1,000 miles away from premier status, GlobalGiving found that partner rewards levels motivated non-profit partners to write the extra project update, and to rally a little harder to reach out to donors in their extended networks for a campaign – because it would take them to the next level, ultimately driving more funds to their project. Organisations on the site began to pay great attention to their status, with 35 to 40 per pent of them logging onto their accounts every week. Progress reporting and related engagement with donors via the site increased markedly.

From quantity to impact: making people sovereign

After a decade, GlobalGiving had met the first requirement of a marketplace: liquidity. It was intermediating substantial funding on a global scale with a business model that covered operating costs. Thousands of organisations around the world had access to global funding sources for the first time in history. It had achieved this by repeated experimentation and learning about how to leverage incentives for both project organisations and donors. The time was now ripe to push ahead with the original vision of a marketplace that not only intermediated money, but also ideas and information.

Well functioning marketplaces drive continuous increases in both efficiency and innovation. Firms constantly compete to serve their markets with both lower prices and new features that will attract more customers. Occasionally companies will come up with an entirely new category of product (for example, the iPhone) that rapidly diminishes demand for the existing category (for example, flip phones), and their competitors must either imitate or go out of business. In the process, many firms make misjudgements about costs or product launches, and suffer as a consequence.

In competitive markets, consumers are sovereign. Consumers alone (not ratings agencies or magazines or government agencies) determine what enhances their wellbeing, and therefore what gets produced. To be sure, smart companies with smart designers and producers tend to satisfy customers more frequently, but the definition of who is 'smart' can be determined only retrospectively, in light of what consumers want. Even most successful firms launch many products that fail, often spectacularly (for example, Apple's Newton). And of course consumers go through many fads where they are temporarily attracted to things that they later realise do not enhance their welfare. Markets face many other imperfections as well, but in the end no one has been able to come up with a better system for responding efficiently and creatively to what people want and need to make their lives better.

Competitive marketplaces thus work based on feedback from the consumers they are supposed to serve. Consumers signal to producers what they like in a variety of ways, most powerfully sales figures (but also various survey mechanisms). Firms spend huge amounts of resources on learning from consumers and their competitors what people want.

Similarly, well-functioning representative democracies operate in a similar manner for the provision of public goods. Politicians and parties that deliver what citizens want get elected, and those who don't are either not elected or kicked out of office. Elected officials study each other's actions closely, with a view toward learning how to please citizens. Nearly all democratic systems face tremendous criticism over manipulation by vested interests, entrenched parties and powerful lobbies, but nonetheless their fundamental accountability to voters binds their behaviour and pushes them towards serving citizens, despite all the flaws. In Churchill's famous words, democracy is the worst form of government, except for all the others that have been tried.

So, once a critical mass of financial liquidity was achieved in the GlobalGiving marketplace after the first decade, the questions became 'What could we do to stimulate a market in ideas and information as well?' And more fundamentally, 'Is there a way to give sovereignty to the people that aid projects are designed to help?' For ten years, Global Giving had continued to improve its platform by testing ways to encourage donors to give and incentivising non-profits to improve their fundraising. GlobalGiving focused on helping non-profits create more impact by democratising fundraising and increasing the quantity of resources available. But democratising fundraising was only the prelude to the main act, which had to be a democratisation of the aid process itself, whereby regular people (rather than experts at big, or small, aid agencies) determined what they needed to make their lives better. In short, the system needed to have feedback loops that ensured that funded projects provided services that people wanted. It also needed to create the ability and incentives for organisations to constantly learn, improve their efficiency and look for innovative ways to help the people they are supposed to serve.

With support from the Rockefeller Foundation and others, in 2010 GlobalGiving began experimenting with tools that allowed tens of thousands of villagers in East Africa to share what they cared most about, as well as looking at whether project organisations were delivering value. This exercise showed a substantial divergence between what many project organisations were providing and what local people actually wanted. GlobalGiving provided information on the discrepancy to project organisations, some of which were angry or feared that GlobalGiving would cut off their access to funding. But the best organisations asked for more information and help regarding how they might find out more systematically what local people thought of their services.

Given the results of this initial experiment, GlobalGiving began developing a range of conceptual and technical approaches to soliciting feedback from the people targeted by specific development projects or initiatives. It was a key founder of Feedback Labs, a new network of policy, advocacy, technical, implementation and funding organisations committed to figuring out how to ensure that what regular people want drives the design and implementation of aid projects. Together, Feedback Labs members (and others, including even some innovative teams at the World Bank) have been developing the tools to listen to and act on the desires of regular people. Feedback Labs members are also studying how and when feedback loops can substantially enhance outcomes, as traditionally measured by experts. Eight leading foundations formed the Fund for Shared Insight[68] to accelerate both a conceptual shift (understanding how feedback can be the 'smart' and the 'right' things to do), as well the development of tools to make an operational shift (the 'feasible' thing to do).

But understanding and tools alone will not change behaviour – as the GlobalGiving team learned with its initial 'build it and they will come' assumption. Incentives are key, so GlobalGiving turned again to its rewards system. Organisations have often assumed that there was a trade-off between time spent raising money and time spent in the field listening to what people want. GlobalGiving aimed to explode this assumed trade-off and create a 'virtuous cycle' between quality and quantity, so that organisations that listen to their constituents and learn how to serve them better have access to more funding opportunities.

In July 2015, GlobalGiving began awarding points in a way that would encourage organisations to listen to the people they serve, act on what they hear by testing new ideas, and learn faster and more efficiently.

Project organisations now get points not just for fundraising-related activities, but also for carrying out activities such as surveying stakeholders about their programming, strategic planning around social impact, and collecting feedback from the people they intend to help. Donors will increasingly be able to see how well project organisations serve their constituents, in much the same way as rankings are displayed on sites ranging from Yelp to eBay to Uber to Amazon. These rankings are also incorporated into GlobalGiving's search algorithms, so donors searching for a generic topic such as 'education' don't have to sift through the more than 1,500 education-themed projects to find the organisations that are working to become more effective. These organisations simply show up higher in a donor's search, and are thus on average more likely to be funded.

As GlobalGiving began to study the links between feedback, learning, incentives and effectiveness, it became clear that its best non-profit partners informally follow the kind of 'listen, act, learn and repeat' behaviour that defines the most successful entrepreneurial businesses. This has led to the adoption of core values and principles underlying GlobalGiving's platform (and its own internal culture):

- **Listen**: help organisations access feedback from the people they serve, share best practices, and discover new ways to improve performance.
- **Act**: provide training and one-to-one consulting to help each user experiment and try new ways of working.
- **Learn**: encourage users to try new ideas and offer them feedback on how well projects are working for the people and causes they serve.
- **Repeat**: help users integrate the new way of working into their operations, so the improvement is continuous and sustainable.

This phase of GlobalGiving is still in its early days, but initial results are encouraging. The success of crowdfunding has already begun to disintermediate funding in certain sectors. But it is the combination of crowdfunding (for quantity) with feedback and ratings systems (for quality) that has the profound potential to create an aid marketplace that puts the people themselves first.

What to take away from this...

- Aid flows are no longer solely dependent on the official aid system, and with this disintermediation of aid through the development marketplace, new players are increasingly able to give and receive funding around the world.
- Democratising fundraising is necessary but not sufficient – democratisation of the aid process itself is also required, whereby regular people (rather than experts at aid agencies) determine what they need to make their lives better.
- Principles from behavioural economics can be used to understand how to both incentivise giving and drive performance of recipients.
- Feedback loops are necessary to ensure that funded projects provide services that people actually want, and to create incentives for project organisations to constantly look for innovative ways to help the people they're supposed to serve.

In this essay, the experience of developing the Refugee Housing Unit is used as a way of exploring the challenge of private sector collaboration for development innovations. Such partnerships are easier to talk about than to create in practice – which shows why investments are needed in managing the partnerships themselves, as well as in novel ideas.

Framing the challenges: private sector perspectives on partnering for development

Per Heggenes is CEO of IKEA Foundation and Johan Karlsson is Head of Business Development at Better Shelter.

Introduction

In 2009, some 43 million people lost their homes and possessions in conflicts and natural disasters. Many naturally sought refuge in humanitarian camps in order to gain access to shelter, food and clean water. While some of these were seeking short-term protection, a growing number – some 5.5 million - had been in forced exile for five years or longer. The emergency shelters used to assist affected populations often become a home for years and even generations. There are few more heartrending thoughts than whole families being forced to live in ragged tents for a decade or longer.

In December 2009 the IKEA Foundation invited two very different organisations for a meeting at their offices in Leiden: UNHCR, the UN refugee agency, and Formens Hus Foundation, a small foundation in Sweden dedicated to sustainable design. The agenda was simple: to discuss post-emergency shelters and how innovation within shelters could be used to improve the lives of refugees and internally displaces persons (IDPs) living in camps.

Despite many differences, our organisations had a common set of questions driven by our shared sense of the inadequacy of existing approaches: Can we think about and deal with this

challenge differently? Could we develop a post-emergency shelter which significantly improves the life of refugees in camps, while still reducing the lifecycle costs?

Thanks to that initial dialogue, a project was formalised to undertake research and development in this area. Five years later the project has resulted in the Refugee Housing Unit (also referred to as Better Shelter units) – a new shelter, thousands of which are currently being deployed in Europe, Chad, Iraq and Djiobouti – along with a social enterprise to market the shelter and continue innovation.

Box 4: Better shelter for refugees

In May 2015, the Office of the United Nations High Commissioner (UNHCR) for Refugees placed an order for 10,000 Refugee Housing Units – also known as Better Shelter units. The shelters are designed to fill an existing gap within UNHCR's solutions – between tents used in emergency settings and transitional housing. While a single unit can last at least three years, its steel frame can last up to ten years, leaving refugees with the option to replace damaged parts with local materials or spare parts provided by the manufacturing company. While the new shelters are more costly than the tents, their lifespan makes them cheaper in the long term.

Each unit comes in flat-packed boxes, and can be erected in a few hours with no other tools than those provided in the kit. While the assembling process isn't much different from that of a tent, the final product resembles a small house, with walls, lockers and windows. The innovation process involved considerable engineering ingenuity to trade-off cost, weight and transportability. Among the notable inventions, the Better Shelter team developed a new polymer to make panels that are lightweight, can withstand harsh climatic conditions and are thick enough to ensure privacy at night.

There is a lot of talk about the need for private sector partnerships for development innovation. In our programme, which had this very principle at its core, a number of specific problems – or opportunities, depending on how positive we were on that particular day – emerged due to the different expectations and business models of development organisations compared to private sector operators. In order for the innovation process to work, these had to be tackled head-on and in a transparent fashion. They range from 'big picture' challenges, such as diverging incentives, through to day-to-day challenges of language.

The open-source problem

Common within development and humanitarian innovation – and social innovation more generally – is the notion that new ideas should be open source in nature. The idea, driven by an understandable humanitarian imperative, is that any product or output should be public domain, and that this allows open collaboration, reduces barriers to entry, and ultimately reduces costs.

While this looks ideal at first glance – it may also be idealistic. We found that this notion needs to be nuanced and caveated when working across multiple sectors and players. In particular, it sits uneasily with the core driver of private sector innovation efforts, which are about recapturing investments made in R&D by providing innovative products to their customers. The open-source model, combined with the private sector approach, carries some important implications for development innovations.

Firstly, an open-source approach removes all incentives apart from a pure corporate social responsibility (CSR), value for companies engaging in development and humanitarian innovation. By its very nature, this means only large companies with well-developed social programmes can get involved – it

excludes a lot of the most dynamic and creative small-and-medium sized enterprises who are, after all, drivers of innovative economies in developing countries. These SMEs can quickly develop an idea into a solution, they are often unencumbered by existing business models, and they have a hunger for novel approaches. By limiting development innovation to big multinationals, there is a potential to bring in capacity and resources, but there is a risk that development innovation will get stuck in organisations that may in their own way be just as slow and bureaucratic as the development sector itself. The experience from the Refugee Housing Unit (RHU) project is that private sector partners who accept CSR projects seldom prioritise resources for them, and when there are conflicts with mission-critical business objectives or deadlines – which inevitably is almost always the case – this can mean the innovation project gets put onto a backburner. This results in delays, problems and costs for other partners.

Secondly, an open-source model can undermine future and existing revenues, particularly for SMEs. Many partners were selected to the Refugee Housing Unit project because of their excellence in niche technology or processes.

If a solution like the RHU is made successful and open source, it will open up a new market and make it profitable to copy the specifications. Not only will the partner lose future sales to the humanitarian partner, it would also lose its overall exclusive position on the market.

Thirdly, when a new technology is invented, large investments are usually required to start production. If there is no guarantee of exclusive ownership of intellectual property – a right to deliver through a partnership contract – there is no incentive to take on an investment. This demand conflicted with needs of UNHCR, who follow the traditional UN system of procurement, which

requires very detailed specifications to be met in a competitive tendering process. The solution was to develop a novel contracting approach: UNHCR receives full ownership rights of procurement specifications stating the required performance of the product, but not manufacturing specifications containing material compositions or design drawings. However, after three years, or 30,000 units produced, whichever comes sooner, UNHCR receives the design specification which will allow them to buy the product in open competition. During this time the SME will have a fair chance to recoup its investments.

The time problem

Matching expectations of time across the humanitarian sector and the private sector also proved a major challenge. Private sector partners have proved a great ability to focus and generate quick results, but have often had limited understanding of the complex requirements of humanitarian crises, or the decision-making processes within large international organisations, such as the UN. When a problem is presented to a prospective private sector partner it may often be met with enthusiasm and will to fix it, but without a full understanding of the limitations. On the other hand, humanitarians may mistrust quick and simple solutions, and want a deeper engagement before solutions are generated, but may equally not be patient with very drawn-out development processes. Striking the right balance is seldom easy and creates continual challenges.

One way to address this is to allow for full engagement in the innovation process, and for new partners to be able to gain a sense of the history of the challenge in question, as well as the discussions and solutions that have already been explored. For example at the onset of the Better Shelter project, UNHCR was already working internally with developing an aluminium

frame for a family tent to better resist weather conditions while still being lightweight enough to transport. Similar ideas were also being prototyped by several other NGOs. This allowed for a quick start for the Better Shelter project. There was a clear understanding of what the humanitarian organisations were aiming for, but it was also obvious to the design specialists that the cost/weight equation could not be resolved by using aluminium. Instead, the RHU team quickly re-developed the aluminium prototype to use ultra high-strength steel that came in at less than 50 per cent of the cost of the aluminium frames, with only a 10 per cent increase in weight. This prototype was ready to share six months into the project, and made for an 'early win' with increased interest from all project partners. This was a 'safe' innovation with low risk – and paved the way for the subsequent much more risky development of the wall and roof panels.

The panels proved much more problematic, with numerous challenges and failures through the development process. The idea was to deliver a solution that provided better privacy and safety than tent canvases, while still balancing the tight cost and weight targets. Since similar requirements exist in many other industries, such as packaging and automotive interiors, the private sector partners initiated a dialogue with different material producers and converters. The main challenge was to make the materials resistant to the extreme weather conditions. Testing showed that beating sun and fine grain dust in strong winds could quickly deteriorate any plastic. Through several iterations, a new composite material was developed. However, its development took time with numerous of failed trials before a working material could be reached, and this led to challenges with managing the expectations of the humanitarian partners. The end result was a completely new material that was unique to the Better Shelter project, but the process of getting there was not straightforward.

The language problem

The private sector partners in the Refugee Housing Unit project are industrial designers. The UNHCR is the world's largest organisation supporting refugees. The language used in these two sectors is by necessity very different, and serves very different purposes. As a result, discussions and conversations can often get lost in translation. A big part of the innovation effort has been to strengthen the transnational capacities of the project, to ensure that language is not a barrier to effective collaboration. While there has been good progress, this is still an area with a real need for more development. When UN field staff explain that the structure should withstand the conditions in Dollo Ado in Ethiopia, the precise requirement is hard to grasp for chemical engineers in Switzerland working with material development. What the engineers need to know is the level of UV ratio it should be able to withstand and according to what standard such radiation should be measured.

This requires, on the one hand, better design and technical capacities within development and humanitarian organisations, to help translate their on-the-ground experience into meaningful messages for designers. And, on the other hand, we need more designers and engineers with experience of the conditions being described. These are not easy or straightforward changes, but in general more investment in mutual learning will open the doors for more shared understanding of how the private sector helps develop and accelerate innovative solutions to development challenges. We believe this is one of the priority areas to better engage the private sector in development – to frame the challenge and better explain how they can help.

Here, we have found that prototypes proved an efficient tool not only for technical development but also for creating a shared understanding of the project, as well as developing motivation among many diverse stakeholders. Language is complex, and

intentions and ideas can easily get lost in long memorandums. Throughout the project, a series of prototypes were developed for display and interaction at various locations – in headquarters, in field offices and in the field for refugees themselves. The ability to physically engage with the prototypes was essential for gaining interest and buy-in. For example, at an early event a prototype for the shelter was displayed at the UNHCR headquarters. A somewhat sceptical staff member approached it, pointed out a few flaws and questioned the durability. As the conversation progressed, the demonstration team suggested he tried to do a pull-up on the frame. He did so, and the frame held – and his view changed swiftly from sceptic to supportive. This was not an especially rational or expected transformation: being able to do a pull-up on a frame doesn't mean that the shelter would withstand high winds or rain. But the prototype helped to tangibly change the nature of the conversation and the perception of the innovation. It demonstrated potential in a way that could not have been achieved on paper alone. In navigating the language issue, in short, it is often better to make and do, than to write and talk.

The failure problem

Failure must be an acceptable option for the donor, as well as the implementing organisations. Taking risks is, after all, the name of the innovation game, and there is a need to take an iterative and experimental approach. This means starting small and slowly growing as problems get fixed and the economies of scale and scope start to be generated. It also means failing in the reality of field settings, to ensure the lessons being learned are the right ones.

But once a prototype has been developed and agreed, the subsequent question is immediate – how do we turn this idea into a business? There are challenges that range from testing the

prototype to seeing if it actually works, and whether it works in different contexts, through to assessing and formalising future business opportunities.

The first prototypes of Better Shelter were delivered with a standard configuration design, which included two doors that were positioned at the gables of the structure. Prior to the field test, the design had been reviewed thoroughly by UNHCR and Better Shelter staff and viewed to be fit for purpose. The refugees participating in the first field tests in Dollo Ado quickly proved that this assumption to be wrong. Firstly, the strong winds common to that area made it almost impossible to open the door against the direction of the wind. When the door was eventually opened the winds would quickly fill the interior of the shelter with fine red sand from the surrounding landscape. Secondly, the position of the door when open allowed outside viewers to see directly inside the shelter, which proved not to fit the preferences of the refugees, who placed a premium on privacy.

But when the same prototype model was tested in Erbil in Iraq the response from refugees was different. There were no strong winds, but instead the challenge was an intensive heat, with summer peaks of 48°c. A different camp design meant that the shelters were positioned differently from each other, and so privacy was less of an issue. In this setting the doors were, in fact, fit for purpose, albeit with some needs for adjustments to quality.

A second example is the packaging. The prototypes tested in Iraq and Dollo Ado came in a packaging, which was made to fit the manufacturing sequence with metal parts bundled together in one box and plastic parts in a second. When deployed in the sandy winds of Dollo Ado, the solution proved inefficient. The components took time to find, and when a structure was not

completed by end of the day, the refugees needed to find a way to secure the opened boxes overnight. As a result, the trial participants suggested that the components could be packed in the order of the building sequence. This led to the development of a new packaging solutions, which reduce building time and reduce defaults in assembly.

The conflicting messages from the two locations led to a critical hypotheses for project: that there was no one-size-fits-all solution, but neither was it possible to tailor an 'on-the-hoof' solution for every local community. Simply engaging with the 'immediate client' of the development organisation was no guarantee that the solution would work – instead the end-user needed to play a crucial role in the design process, and the prototype needed to be allowed to fail before it could succeed. With the doors, the design solution was to work to increase the modularity of the concept even further. The design team had to redesign the doors so that they could be positioned wherever was ideal in each setting, and this meant changes to the rest of the structure and system. Similarly, the packaging needed to be developed in a way that was sensitive to the specific needs of end-users.

While these were positive examples, in general the route to testing in development and humanitarian settings is far from straightforward. It requires organisations like UNHCR to experiment with alternative ways to testing and evaluating the prototype, and manage risks inherent to the aid provider. Through this process, it can be hard for the private sector partner to maintain interest and engagement. In the most challenging settings, this can result in the private partner withdrawing from the project because of the uncertainty it poses.

Conclusion

The road to developing the Better Shelter has been far from clear and straightforward, and required the consortium to overcome a number of assumptions and biases. What was especially important was that we needed to do this as a collective learning process across distinct – and very different – organisations.

All of these challenges can be summed up under one single message: the discussion about humanitarian shelter innovation, and development innovation more generally, tends to focus on the capabilities of new technologies and modern materials. Of course, this is natural, and new materials and technology were a crucial and central enabler in the effective design and manufacture of the Refugee Housing Unit. Without such a focus, it would not have been possible to achieve an appropriate trade-off between cost, weight and performance. But the technology was only one aspect among many aspects and enablers that were essential for making the project work. The other central enablers were the people and the institutions involved. And contrary to initial expectations, these aspects have proved just as challenging, as the technological innovation process, if not more so. In fact, in many of the examples above, aligning stakeholders with different backgrounds and expectations repeatedly proved harder than developing the technology itself.

Hearteningly, it was never difficult to motivate either humanitarian or private sector partners to commit to the scope of the project, and it has been a profoundly positive experience to see how many people at different levels in various organisations genuinely want to 'do good'. The assembly line workers in the factories of the private sector partners, their company managers and the UNHCR representatives in Geneva

and in operations around the world – all of these people are clearly very driven by the need and the opportunity to make life better for some of the world's most vulnerable people.

How this is best done has been a constant source of debate – and that is perhaps the way it should be. In the end, it is vital to remember that innovation is about the people. It is the people in the different organisations, their knowledge, capabilities and trust in each other that overcomes the barriers to change.

What to take away from this...

- Development organisations are likely to have very different incentives, expectations and success metrics from private sector operators. These need to be tackled from the outset and managed throughout a partnership.
- Ensuring the right incentives for private sector investment in a project is critical. These incentives may even vary within companies. Skillsets for designing and managing intellectual property agreements may become more and more important in the future.
- Donors and implementing organisations need to be able to understand, accept and manage the risk of failure when taking on experimental projects.
- It's important not to underestimate the level of investment required in building the trusting relationships and levels of mutual understanding required to make a project work.

The international relief system is built on collective action and collaboration, and this is equally true of the system's efforts to innovate. Drawing on experience from over 65 funded projects, The Humanitarian Innovation Fund share their insights on how to collaborate strategically and build an ecosystem for innovation.

How to be strategic in collaboration for humanitarian innovation

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The humanitarian innovation imperative

Humanitarian emergencies affect millions of people around the world, whether this due to conflicts in Syria or South Sudan, or the impact of cyclones and earthquakes in Fiji and Nepal. Such crises place people in urgent need of help to survive and recover, undermining development strategies and shattering individual lives. In many ways innovation is hard-wired into the humanitarian mind-set. Working under extreme time and resource pressure, aid workers rely on rapid assessment, rapid response and rapid learning to solve the multitude of problems faced in the delivery of relief materials and services.

Despite this entrepreneurial and adaptive spirit, those initiating innovations in the field often do not get the opportunity to reflect on, document, evaluate and share good ideas across their own organisations. This is linked to management practices and culture that prioritise short-term action and results, and budgetary constraints that make investment in experimentation hard. There are few sources for funding and support for testing new ideas, especially at the early stages.

Likewise, on the other end of a response continuum, monitoring and evaluation tends to be weak and focused on gathering information for donor reporting and accountability, rather than identifying future opportunities for innovation. Scaling of successful innovations, even when evidence does exist, often calls for reallocation of existing resources, which can be curtailed by institutional and political barriers to change.

For humanitarian innovation, there are also major ethical considerations. It is one thing when a beta version of a restaurant-finding smartphone app sends customers on a wild-goose chase, and quite a different proposition when developing new products to help mothers and community health workers assess malnutrition in children.[69] When working with extremely vulnerable people who may be struggling for their lives, organisations are duty-bound to ensure appropriate checks and balances are in place and that innovation is principled and meets the highest ethical standards.

As a result of these and other challenges, innovation tends to happen despite the system, rather than being directly nurtured and supported by it. This innovation deficit has led to a growing interest in investing in innovation processes and capacities, with support from senior leaders within governments, UN agencies, international NGOs and private foundations alike.

Within the work of the Humanitarian Innovation Fund (HIF), the need to collaborate strategically is a core principle. Over the past five years we have funded over 65 innovation projects at different stages, ranging from initial problem recognition through to invention, development, implementation and diffusion. Most innovations go through recognisable stages of evolution at which different types of collaboration are needed. For example at an earlier stage it may be more important for an international NGO to collaborate with a local community-based organisation to

understand user needs, but later it may be critical to partner with an academic research team to build strong evidence.

In general we have found that collaboration is essential for innovation in two ways. First, it improves the quality of the ideas, with many eyes taming the complexity of the problems and identifying opportunities for doing things differently. Second, it improves the social agency of new ideas, generating the networks and momentum needed to push successful innovations through to adoption and scale. Collaboration done well can help navigate age-old innovation barriers related to brand and ownership, and help support the transition from 'not invented here-ists' to 'proud partners'.

Our approach to collaboration and lessons learned

Central to our work is supporting partnerships between UN agencies, international NGOs and government, but also reaching out beyond the sector to engage academia, the private sector, new types of volunteer groups and the general public. The majority of our funding calls are open. The premise behind this is that we can't always predict where new ideas will emerge from, and that by linking knowledge and experience of emergency response to new actors, we have the best chance to support new value creation that will be of benefit to communities affected by disasters and crises.

From our starting point of issuing open calls to fund innovative ideas, the HIF increasingly sees our role as designing and facilitating the process of collaborative innovation in the humanitarian system. We aim to create spaces and opportunities for a variety of actors, from inside and beyond the sector, to seek funding for new ideas and find ways of advancing, testing and scaling them. There are four basic lessons emerging from this work:

Lesson 1 – **Understand the degree of openness required**

The nature of the challenge must determine the innovation processes designed to meet it. One of the key variables in this decision-making process is working out how open or closed we should be, and at which points during the process we should be harnessing the wisdom of the crowd, and when we need to focus on working with the most promising solutions and teams. For example, there might be a choice between two options: running an online competition open to all, versus a targeted ideation process with selected experts. In reality, 'openness' exists on a spectrum, and different approaches have associated benefits and costs.

The more open a solution search, the larger the potential pool of ideas, with online competitions particularly useful for attracting ideas from a variety of domains (see Box 5). However, it is not enough to simply be technically and legally open: in order to engage people who may be unfamiliar with a specific area of humanitarian crisis, the openness must be combined with a concentrated outreach effort to make people aware of the opportunity, and to help them see that their skills or knowledge are relevant. This approach can be inefficient when it comes to problems that require extensive contextual or operational knowledge and experience. Such problems do not always favour openness: if you needed to find a medical surgeon to operate on you, it might be wise to research the top five in the special field, rather than post an open advert on Gumtree.

Box 5: **An open collaboration: Lighting to make toilets safer for women**

The HIF has been working with the innovation solution provider InnoCentive to develop and launch a number of open innovation competitions. Together these challenges have led to the submission of many hundreds of potential solutions. Not all

of these challenges have led to success, but two have led to promising new ideas. In response to a challenge to find low-cost and durable lighting solutions for refugee camp toilets, the HIF awarded a prize to a social enterprise that has developed the GravityLight, and has been working with them and operational agencies to further develop and prototype a solution fit for use in emergency settings.[70]

More focused processes, such as targeted calls for proposals or invite-only ideation workshops, are more efficient when you can identify the right knowledge domains and the right parties within a given field[71] This also reduces the number of solutions that will be put forward, with a likely higher overall quality of ideas, reducing internal costs in evaluation. The big risk is that innovations will be incremental or lack creative or disruptive thinking because it is the 'usual suspects' who are the known experts within an area, talking to each other again. To mitigate against this, innovation managers must find ways to span boundaries into analogous knowledge domains, and design processes which promote and reward creative thinking. In addition the elements of healthy competition and collaboration need to be balanced between participants.

Lesson 2 – **Identify shared priority problems through gap analysis**

Humanitarian innovation takes place in a sector characterised by a paucity of resources and an ever-increasing and often confusing patchwork of strategic and operational concerns. As a result there is a crucial role for conveners such as the HIF to establish a degree of consensus on shared problem areas and challenges. This enables us to use limited resources to fund innovations that will resonate widely within the sector and respond to the most important needs for disaster-affected communities.

Getting a group of leading humanitarian experts onto the same page about what areas are most in need of innovation requires respect for and understanding of the different incentives driving their organisations, as well as simple governance structures for negotiating and influencing the decision-making, and building long-term relationships with and between them to generate a sense of community.

A key strand of our convening work is the development of Innovation Gap Analysis in specific thematic areas. To date we have focused on emergency water, sanitation and hygiene (WASH), and gender-based violence programming in emergency contexts (GBV). Following the Gap Analysis we also invest in detailed problem and solution exploration, to create a shared baseline of knowledge and key areas in which to stimulate collaborative innovation.

Box 6: **HIF WASH innovation gap analysis**

In 2013, the HIF worked with Oxfam, the leading NGO providing water, sanitation and hygiene (WASH) services in emergencies, to produce an analysis of key innovation gaps in this area. We reviewed existing literature, consulted with over 900 people across nearly 40 countries, spanning 45 organisations – including donors, UN agencies and international and national NGOs – and carried out consultations with disaster-affected communities. This created a long list of innovation needs, which led to more detailed problem exploration, challenge articulation and innovation funding.[72]

The tangible benefits of such an approach include the ability to create solution specifications that reflect a shared understanding of problems and needs, as well as the ability to collectively develop new solutions that would be beyond the risk-tolerance of any single organisation.

Lesson 3 – **Support boundary-spanning partnerships to help build an ecosystem for innovation**

Across all our work we encourage and support diverse partnerships that leverage the assets of different actors to generate and progress innovations. To date over 80 per cent of the innovation projects the HIF has funded are partnerships of two or more organisations, and we find this figure is increasing every year as those we fund see the value in collaboration. What is even more encouraging is that the partnerships are becoming more diverse in nature, to include actors not traditionally associated with humanitarian response.

Recent decades have seen the traditional humanitarian sector develop a range of structures to aid coordination and collaboration, not least the UN Cluster System that shapes emergency response activities across sectoral areas (such as food or health). While such structures facilitate operational coordination, they have proved less suited to supporting R&D – and what many are now calling for is investment that supports innovation in the broader ecosystem.

Partly this is because there is a much larger range of actors now recognised as bringing unique capacities to the international humanitarian system, including private sector companies and social enterprises, universities, diaspora groups and local first responders. Traditional humanitarian actors have been slow to establish partnerships that leverage the assets that these groups have to offer. Within the HIF portfolio we have a growing case-base of such new forms of collaboration – from those pairing humanitarian organisations with the private sector, to others bridging into business and philanthropy (see Box 7).

Box 7: **Words of Relief Crisis Response Network**

Words of Relief Crisis Response Network is a HIF-supported project of the non-profit organisation Translators without Borders. They realised they needed to partner with the Microsoft MT Local Language Team to create an online translation engine and crowdsourcing platform, and that they would need to create spider network communities of professional volunteer translators to bridge the gap between crisis-affected populations and aid providers. The work began in East Africa, but was rapidly adapted to support public health messaging during the Ebola crises in Liberia and Sierra Leone.[73]

As new types of organisation become more active in humanitarian response, this is throwing up new questions and barriers for partnerships. For example, IP and licensing arrangements can often be important in the business model viability of private sector companies and social enterprises. This is an area many NGOs are uncomfortable and unfamiliar with. As a funder we ourselves need to understand when encouraging more open licenses supports innovation, and when this can limit potential for sustainability and scale.

Our work has deepened and become increasingly proactive as we have developed thematic challenge funds in response to innovation needs. Within these challenge funds we have been actively brokering partnerships between humanitarian agencies and other actors, providing resources and support during the process (see Box 8).

Box 8: **Supporting new forms of collaboration in the response to gender-based violence (GBV)**

In December 2015, as part the HIF's work on reducing gender-based violence in emergencies, the HIF convened leading practitioners alongside human-centred designers and innovation

management experts, to explore how design thinking and methods could stimulate user-driven, ethical innovations in response to the spiralling rates of violence against women and girls in many emergency settings. The event supported knowledge sharing, relationship building and the emergence of specific ideas for doing things differently. Following the event, the HIF offered seed funding to a number of projects pairing designers and humanitarians seeking to work collaboratively to create new solutions.[74]

Increasingly we are moving beyond brokering bilateral partnership towards strengthening the overall ecosystem of actors involved in humanitarian innovation. This means paying careful attention to the diversity and health of the ecosystem, identifying in a proactive way where we seem to be lacking vital skills or capacities, and working to address these.

Lesson 4 – **Establish open platforms for data and knowledge exchange**

Some of the most powerful collaborations do not take the form of formal bilateral partnerships. Increasingly open data and knowledge-sharing platforms are providing an incredible tool for people who have never met to support each other globally and asynchronously. In a humanitarian emergency such platforms empower a much wider group of people to engage in a crisis response: the platform gives them an opportunity to contribute their information, expertise and ideas in a timely and constructive way. As a global community it has never been easier for people to get involved and help.

The collaborative efforts made through these platforms can improve the coordination, speed and quality of existing relief response, and in other cases also potentially evolve the conventional response in more fundamental ways. In other words,

these platforms can lead to incremental innovations in efficiency, or more transformative innovations in the way humanitarian aid happens. One promising platform the HIF has funded has been in the area of data sharing itself (see Box 9).

Box 9: **The Humanitarian Data Exchange (HDX)**

The Humanitarian Data Exchange (HDX) is an open platform for sharing operational and contextual data about the impact and response to humanitarian crises. The goal of the platform is to make humanitarian data easy for operational agencies to find and use for response analysis. Launched in 2014 it has already been accessed by over 100,000 people, and has supported relief workers in the Nepal earthquake and Ebola crises. HIF played an important role at the start of the initiative, supporting the development of the Humanitarian eXchange Language (HXL) code on which the system is based.[75]

While the Humanitarian Data Exchange (HDX) represents the development of a crucial central, UN-hosted node for the sharing of data between operational agencies as they design, deliver and modify their response strategies, such open platforms are also democratising the creation and sharing of crisis data. Particularly since the overwhelming response of such communities in the aftermath of the 2010 Haiti Earthquake, these groups have become a new constituency in the international humanitarian response community, and the HIF has worked to support their integration into response structures.[76]

While these new collaboration platforms present an enormous opportunity for humanitarian innovation, important questions remain. These relate to the privacy and ethical concerns of sharing crisis data relating to volatile and sensitive contexts, and where there is the potential risk of misusing or releasing personal data that may have been collected for other purposes and with

limited consent. Perhaps more fundamentally, there is the crucial question of measuring how such new platforms are adopted and used creatively by operational agencies to innovate how they work, and ultimately how these changes contribute to saving more lives and reducing suffering in crisis.

Conclusion: Why collaboration must be strategic

As the first initiative working to support innovation across the humanitarian system, openness and collaboration have been ingrained in our approach since we started in 2010. It has now become conventional wisdom in the sector that no organisation should innovate on its own. Our initial approach to collaboration was characterised by the principle of collaborating widely, with our starting point being to bring in as many and as diverse a set of actors as possible to solve the problems we were trying to address. After consultation with our project partners and stakeholders this has evolved and we now articulate our approach as the need to 'collaborate strategically'.[77]

Collaboration is too important to be left to chance. Instead it is about exercising strategic choices in pursuit of collectively understood innovation goals, sharing data and using open licenses wherever possible and building relationships by recognising and prioritising the types of collaboration that bring together the complementary expertise crucial to achieving success at different points along the innovation journey. For us, learning how to better foster and facilitate meaningful collaboration is central to our mission to enhance the humanitarian system's ability to innovate. Humanitarian leaders of tomorrow will need to be skilled in how to design and leverage collaborative networks to support communities around the world facing an increasingly uncertain and vulnerable future.

What to take away from this...

- Who to collaborate with depends on the problem you are trying to solve: if you know exactly what knowledge or skills are required then it is more efficient to reach out to targeted specialists. If you don't, then it is useful to be more curious and open in the search.
- Conveners and brokers can help establish a degree of consensus on shared problem areas and challenges, and facilitate appropriate connections. This can allow for collective action on developing new solutions that would usually be beyond the risk-tolerance of any single organisation.
- Open data and knowledge-sharing platforms help people to collaborate and support each other globally without other intermediaries. Such efforts could improve coordination, speed and quality of existing relief responses but important ethical and impact questions remain.

Part four: **How to scale innovations and transform systems**

Gavi, the Vaccine Alliance

What a systemic approach to scaling an innovation looks like, the considerations and importance of national ownership

World Bank

How flawed thinking about scale is damaging efforts to maximise the impacts of innovation in development, and how to get it right

High Level Panel on Humanitarian Cash Transfers

How even good ideas that are diffusing well can get stuck in the system, and how to overcome the barriers

Institute for Development Studies and Kiwanja

The dangers of treating digital technologies as a development panacea, and the opportunities of digital technologies to enable innovatiovns to scale across many sectors

Scaling has become a ubiquitous term in policy discussions about innovation, but it can mean very different things in different contexts: from diffusion through replication and growth, to open-sourced experimentation, from adoption into government policy to commercialisation. Regardless of the pathway to scale, new ideas always emerge into complex systems where there are strong tendencies toward market incumbents and conservatism and against novelty.

Achieving scale means innovators have to broaden their focus from making the idea work to changing the wider system of which it is a part. The innovations described in the essays in this section – from new vaccines to mobile money, to direct cash transfers – have all contended with this challenge.

In international development, as all of the contributions in Part four make clear, scaling requires a clear sense of your end-game. But how can innovators achieve demonstrable results in the short term, while sowing the seeds for systematic transformation. These essays suggest three routes: first, **employing different ways of seeing the system as a whole and actively envisioning a new system**. This might involve bringing many different perspectives together from across a system or problem space, as is shown in the World Bank case study, or it might mean using new analytical techniques to better understand and facilitate systems change, as the Gavi case study illustrates.

Second, **transforming systems means working in contextually relevant politically intelligent ways**. As the essay on humanitarian cash transfers shows, innovators need to engage with the technical aspects of change, by building evidence and networks, but also work with power dynamics and politics to

create sustainable impact. The digital technologies essay also makes the case for a deeper understanding of social, political and economic dynamics. Where power and knowledge are concentrated in a system, a small number of actors can be hugely influential. In contrast, where power and knowledge are more widely distributed, an innovation might scale by a more complex combination of societal and public behaviours. Most often, however, systematic innovation requires a combination of new technologies, market dynamics, new policies, skills and changed behaviours.

Third, **scaling innovation may mean working across a host of multiple interacting systems**. As all the case studies show, this includes the aid system that fosters and supports innovations; the national development system that mediates and shapes what innovations get taken up, how and by whom; and the local systems of society, culture and markets that determine who gains and who loses. This can be challenging, and makes national and local ownership all the more important as a route to transformative change.

Finally, **development innovators need to get better at playing the long game**. Inappropriate assumptions and theories of change can lead to declaring success too early, or giving up on valuable efforts too easily. All of these essays show scaling takes time, and while not amenable to simple recipes or toolkits, taking a long view with commited experimentation in the interim will be central to finding out what works.

The notion of giving poor people cash instead of goods and services may not seem like a radical idea, but direct cash transfer is an innovation that has only recently reached mainstream acceptance in development and humanitarian aid. This case study explains the institutional reasons why cash is such a challenging idea, and the systemic changes that are needed if it is to transform how aid is delivered.

Cash transfers: a simple innovation that is transforming the humanitarian system

Paul Harvey is a Research Associate with the Humanitarian Policy Group at the Overseas Development Institute, Partner at Humanitarian Outcomes and Technical Expert for the High Level Panel on Humanitarian Cash Transfers.

Humanitarian organisations have traditionally supported crisis-affected people with physical commodities: food, shelter, water, tents, clothing and medical assistance. Many of us are familiar with images of an aid convoy with crucial supplies snaking its way over a pass, or sacks of food being unloaded from the back of a truck or plane. However, there has been longstanding and widespread dissatisfaction with such distributions as a default response to humanitarian crises. While it can save lives, it is also widely perceived to have been over-used, often with little attention to need or context.

Today, however, crisis-affected communities and families may instead receive an envelope of cash, a plastic card or an electronic money transfer to a mobile phone, with which they can buy food, pay rent and purchase essential goods locally.

The idea of giving people cash to buy what they need instead of goods is a simple one and far from new: cash was provided by the Red Cross in the 1870–71 Franco-Prussian War; in response to famine in 19th century India; and in Botswana in the 1980s. Amartya Sen famously made the theoretical case for cash transfers to respond to humanitarian crises in *Poverty and Famines* (1981)[78] and *Hunger and Public Action* (1991),[79] for which he won a Nobel Prize in Economics. Sen argued that famines were caused by poor people not being able to afford food, not an absence of food in local markets. On this basis, he recommended a greatly expanded use of cash transfers to respond to famine.

Despite, however, the simplicity of the idea and its long history, giving people cash does represent a radical idea for humanitarian organisations. Even though cash had been found to be – in the right circumstances – more timely, less costly and more empowering to communities than traditional aid distribution, many agencies struggled to adopt cash. This can be attributed to organisational inertia, institutional and political incentives that held that food was best, and a somewhat outmoded notion of the 'undeserving poor' – that cash should not be given because aid recipients would not spend it effectively.

Over the last fifteen years the perception of cash-based work in humanitarian relief has shifted dramatically – from 'radical and risky' to a mainstream programming approach. Cash transfers are now a growing part of the response to humanitarian crises, but they are still a marginal one. The recent High Level Panel report estimated that their use has grown over the last ten years from less than 1 per cent to very approximately 6 per cent of total humanitarian spending ($1 to $1.5 billion of $25 billion in 2014).[80]

Even getting to 6 per cent has required radical systematic change in organisational mandates and systems. This shift has led cash to be repeatedly pointed to as one of the few genuine examples of innovation in the humanitarian sector. But much more could be done – the challenge for the system is how to get from 6 per cent to 50 per cent, or even 70 per cent. That would require much more radical change in how humanitarian action is delivered, coordinated and held to account.

In this short paper we initially outline why cash should be seen as an innovation, and how it makes sense for cash to be viewed as a core component of humanitarian action in many settings. We then turn to how the use of cash is already changing the system, and conclude with the further transformative changes that should accompany its expansion.

The evidence for cash as a much-needed innovation in humanitarian action

Although it may not seem like an innovation to give people cash, in the context of humanitarian aid, cash-transfers have involved many different kinds of innovations to come together over time. Giving a community or family cash requires new approaches to:

- **Aid products** – in particular, the form that transfers might take, from physical or digital transfers, or some form of voucher.
- **Aid processes** – thinking about how to effectively distribute cash, and the financial skills needed to do so on a large scale.
- **Aid strategies** – adapting the function of humanitarian agencies from providers to enablers.
- **Aid business models** – changing the fundamental relationship so that disaster-affected communities aren't seen as passive beneficiaries, but active participants in their own recovery.

In the early days of cash transfers these changes were undertaken informally – 'below the wire' – in high-risk operations where there was no option but to go against the usual aid delivery model. Some very common applications were in settings where aid was not authorised by warring parties, who would blockade or even bomb any attempt to provide physical assistance. There are tales abound from the 1980s of maverick aid workers smuggling cash into desperate communities and distributing this undercover to families in need.

This situation continued until around 2000-2005, when a series of studies by the Red Cross and the Overseas Development Institute made the case for cash transfers more explicit. The Indian Ocean tsunami, which was one of the most heavily financed disaster responses in history, saw large amounts of

money made available for cash programmes, as well as resources to enable systematic learning across many different responses in parallel. This led to the development of a multi-country network of practitioners sharing experiences and ideas, and led to many new organisations experimenting with cash. What was once radical was crossing over into the mainstream.

A decade on, there is a growing body of evidence that suggests, in many contexts, cash is a better way to help people and stimulate markets, and represents value for money compared to in-kind alternatives. The obvious concerns about using cash – that it might cause inflation for key goods in local markets, be more prone to abuse and corruption or diversion, or more difficult to target and might be more likely to be controlled by men and so disadvantage women – are not borne out by the evidence. Cash transfers have been shown to support local businesses and markets, and people often prefer receiving it because it gives them greater choice and control over how best to meet their own needs, and a greater sense of dignity.

The fact that cash transfers provide access to a range of goods and services offers unique advantages from the standpoint of value for money.[81] People who receive cash transfers use them for the goods and services that they value most, to the extent that these are available. Aid agencies cannot easily or efficiently provide the precise equivalent of cash through in-kind approaches given the diversity of goods and services purchased. It usually costs less to get money to people than in-kind assistance because aid agencies do not need to transport and store relief goods.[82] A four-country study comparing cash transfers and food aid found that 18 per cent more people could be assisted at no extra cost if everyone received cash instead of food.[83] In Somalia, 35 per cent of food aid budgets went to beneficiaries, compared to 85 per cent of cash transfer budgets.[84]

A consistent theme in research and evaluations is the flexibility of cash transfers, enabling assistance to meet a more diverse array of needs. In the Philippines, for example, people reported using the money for food, building materials, agricultural inputs, health fees, school fees, sharing, debt repayment, clothing, hygiene, fishing equipment and transport.[85] The element of choice is critical. Rather than having aid agencies assess and decide what people most need, cash enables people to make their own decisions. To put it another way, cash is not just an innovation within the aid system, but it allows crises-affected communities themselves to be more creative and innovative in shaping their own recovery.

Whether or not cash is the most appropriate and effective way of supporting people depends on the context and an assessment of whether people will be able to buy what they need safely in local markets at reasonable prices, and whether cash can be safely delivered. There will be moments when markets are too weak or disrupted, times when the initial response needs to be partly or fully in-kind, and sectors where in-kind assistance or vouchers are needed. Nobody expects cash to replace vaccines or therapeutic feeding for malnourished children, or that money alone can enable the safe rebuilding of shelters. But the times and contexts when cash isn't appropriate are narrow and limited, and should not be used as excuses to continue providing in-kind assistance if cash becomes possible. Markets recover quickly after disasters and continue during conflicts.

Aid agencies therefore need to be equally nimble and flexible in switching between cash, vouchers and in-kind assistance, and in finding the right combinations of assistance. This has been described as moving away from a model of delivering 'best practices' towards one of identifying 'best fits'.

Providing cash does not and should not mean that humanitarian actors lose a focus on a key public good that they are uniquely placed to provide: proximity, presence and bearing witness to the suffering of disaster-affected populations. On the contrary, streamlining aid delivery should allow them more time to focus on exactly that. Giving people cash, therefore, does not imply simply dumping the money and leaving them to fend for themselves.

How cash is disrupting the system

UN agencies, the Red Cross and Red Crescent Movement and NGOs have made huge progress in institutionalising the use of cash transfers as an innovative approach within their organisations.

Humanitarian cash transfers have also been linked with longer-term social protection programmes. In Kenya and Ethiopia, safety nets have been designed to expand and trigger increased payments in response to shocks that would normally be met through humanitarian response. In the Philippines, the World Food Programme worked with a government conditional cash transfer programme for the poorest households to provide top-up grants to over 500,000 people affected by Typhoon Haiyan.[86]

Cash transfers are also becoming embedded in policies, guidelines, standards and statements of principle. OCHA is investing greater effort in ensuring that cash programming is integrated into existing coordination mechanisms. The Cash Learning Partnership (CaLP) has helped to build the capacity of organisations through training, shared learning and good practice. CashCap is a new initiative funded by ECHO and managed by the Norwegian Refugee Council to provide a standby capacity of experts in cash programming.

None of this has been easy. The staff responsible for making cash part of responses, talk about the hard slog of reviewing and revising business processes across their organisations. There has been considerable time and resource invested in training, capacity-building and developing guidance and toolkits. Serious amounts of research and evidence, an emerging network of practitioners with a passion for an alternative way of doing things, and the windows of opportunity for new practices presented by major crises such as the Tsunami, also all played a role in getting to 6 per cent.

That hard work is bearing fruit, with the use of cash growing in a system usually slow to change and adopt novel approaches. But the effort involved shows just how political the process of scaling innovations is in the humanitarian sectors. This may explain why cash is one of only a small number of innovations in the humanitarian sector. Where there hasn't been the ability to engage with both the political and the technical aspects of change, good ideas can run aground. That said, there are many aspects of the technical development of cash – in terms of generating the evidence-base, conducting small-scale experiments, and having plans that are 'good to go' ahead of potential crises – that are not yet commonplace across the sector. As a result, much that is done in the name of humanitarian innovation remains a rather hit-and-miss affair, with the success of cash proving hard to repeat.

Making systemic change that lasts: turning challenges into opportunities

Despite the successes of scaling cash, we are not yet where we need to be. It is clear that moving from 6 per cent to 50 to 70 per cent – which is where the system should be heading – requires more radical change. There are three broad aspects to this change.

The **first** is the humanitarian system needs to move towards a scenario where cash transfers represent the core of response in the vast majority of contexts. Worryingly, cash is instead being increasingly subjected to the same fragmentation, duplication and lack of coordination that often characterises in-kind humanitarian assistance. This is a missed opportunity to better harmonise humanitarian response and free up agencies' staff and resources to focus more on other important aspects of programming – such as targeting, monitoring and communicating with affected people. In Lebanon in 2014, 30 aid agencies provided cash transfers and vouchers for 14 different objectives, including winterisation, legal assistance and food. But people do not divide their needs by sectors and clusters.

A more logical approach is to have fewer larger-scale interventions providing unconditional cash grants, using common delivery infrastructure where possible, complemented by other forms of humanitarian aid in sectors where cash is not appropriate. This would involve radically rethinking some of the basic tenets of the aid delivery system – which many would argue is long overdue.

Second, cash transfers create opportunities for new partnerships with the payments industry, building on these actors' knowledge of how to get money to people securely. Payment companies and businesses are already working with aid agencies to develop or make use of existing payment and information management solutions – ranging from large established global companies to smaller, newer and national ones. While engagement so far has tended to focus on aid agencies working with financial service providers to deliver cash, there are opportunities for private sector roles in wider processes of registration and data management. The transparency and tracking of digital payments also offers opportunities to address donor government concerns

about potential corruption and diversion, including to terrorist groups, which could hinder the expansion of cash transfer programming in some settings.

Third, wherever possible, cash-based responses should be locally managed, delivered by governments assisting and protecting their own citizens. They should be supported by national civil society, embedded in better preparedness and linked to longer-term social protection. Where international assistance is needed, humanitarian cash transfers, when appropriate, should be the central plank of strategic response plans. Cash should usually be provided as a core grant to meet a range of basic needs in ways that cut across sectors and clusters. There should therefore be fewer aid organisations involved in the management and delivery of payments and better partnerships forged between governments, local actors and private sector payment companies.

Ultimately, moving towards a 'cash front and centre' scenario requires radical rethinking and transformation of the current humanitarian system. It needs aid organisations to rethink what they are good at, their core strengths and why they are needed in crises. Organisations need to stop thinking about themselves as deliverers of things and shift to being advocates for disaster-affected people. It ultimately means changing our notions of what it is to be a humanitarian: a move from being logisticians to something more akin to global social workers, focussing on engaging with disaster-affected people about the challenges they are facing and how these can best be addressed, and on understanding how assistance can best fit into people's own strategies.

Clayton Christensen of Harvard Business School has famously described how 'disruptive innovations' are those that take root through simple, low-cost applications at the bottom end of a

market and then displace alternative solutions.[87] At the heart of disruptive innovations is the fact that they provide benefits to new users who were previously locked out of a given market or service. Disruptive innovations work faster, and are easier and cheaper than their predecessors, giving more users more access to more products or services, and thereby transforming entire industries. It is increasingly clear that giving disaster-affected people cash instead of goods and services is an exemplary illustration of such a disruptive innovation. Whether the humanitarian aid system can handle the consequence of this disruption remains to be seen.

What to take away from this...

- Scaling the use of cash transfers has required radical systematic change in organisational mandates and systems. There has been considerable time and resources invested in research, evidence, capacity-building and developing toolkits.
- Major crises, like the Indian Ocean Tsunami of 2004 in the case of cash transfers, can present windows of opportunity for new practices to be scaled.
- The time it took for cash transfers to grow shows how political the process of scaling innovations is in humanitarian sectors. Where there hasn't been the ability to engage with both the political and the technical aspects of change, good ideas can run aground.
- Scaling cash transfers further to make them the core response will require a radical rethink and transformation of current humanitarian systems, and even to change our notions of what it is to be a humanitarian.

Drawing on experience from the World Bank, this essay argues that thinking about scale in the wrong way can damage efforts to maximise the impacts of innovations in development. It argues that scaling in complex contexts is less about scaling solutions, and more about scaling the process by which we develop solutions, experiment, learn and adapt.

Why innovation seldom scales, and what to do about it

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The path to innovation at the World Bank

Let me start with a provocative suggestion: the whole notion of scaling innovations in international development is informed by faulty thinking, leading to misguided approaches, inappropriate implementation and flawed assessments of what actually happened. That's why so many innovation efforts are stuck: like a jeep in thick mud, an enormous effort expended on pushing pedals, spinning wheels, and staying still.

Maybe this is a bit harsh. But it seems clear to me that international development actors are on the whole not yet thinking about scale with the right mental models, nor with the right language, let alone guided by the right examples of what has worked and why. And this is limiting the potential for social innovation to fulfil its larger promise of transforming development outcomes and enhancing human progress.

When I joined the World Bank more than six years ago to lead a new innovation practice, the organisation asked me to help expand the space for experimentation and learning with an

emphasis on emergent technologies. But that mandate was intimidating and counterintuitive in an 'expert-driven' culture. Experts want detailed plans, budgets, clear success indicators and minimal risk. I remember someone telling me that the organisation loves innovation as long as it's been done before.

But innovation is about managing risk, navigating uncertainty intelligently and venturing into the unknown. You fail fast and fail forward. It has been a step-by-step process, and the journey is far from over, but parts of the World Bank today see innovation as essential to achieving its mission. The process has taught me a lot about seeding innovation in a culture of expertise, including phasing change in how we think about technology, teaming, problem solving and ultimately leadership.

As a newcomer, my goal was not to try to change the World Bank's culture. I was content to carve out a space where my team could try new things we couldn't do elsewhere in the institution, learn fast and create impact. Our initial focus was leveraging technologies and platforms that, if they took root, could be very powerful.

Over the first 18 to 24 months, we served as an incubator for ideas and had a number of successes that built on senior management's support for increased access to information. The Open Data Initiative,[88] for example, made our trove of information on countries, people, projects and programmes widely available and searchable. To our surprise, people came in droves to access it. We also launched the Mapping for Results initiative,[89] which mapped project results and poverty data to show the relationship between where we lend, where the poor live and the results of our work. These programmes are now mainstream at the World Bank and have penetrated other development institutions.

So that's what I call **phase one**: where we had some important successes, but it became clear that we needed to take a more systematic approach to innovation. We realised that we needed a methodology, a process and a way to measure results. We also needed a safe space to take calculated risks and test ideas that were too early or disruptive to pursue in other parts of the institution. That's when we set up innovation labs.

The lab idea – **phase two** – required collaboration and experimentation in an unprecedented way. For example, we worked with other parts of the World Bank and a number of outside organisations to incubate the Open Development Technology Alliance, now part of the digital engagement team at the World Bank. It worked to enhance accountability, and improve the delivery and quality of public services through technology-enabled citizen engagement, such as using mobile phones, interactive mapping and social media to draw citizens into problem mapping and problem solving.

We quickly realised, however, that we were not going to come up with all the great ideas sitting in our offices. We didn't have a monopoly on creativity. Innovations were happening all around us. We could use our innovation labs to surface and incubate innovations through internal challenge funds, and use external competitions to identify business model innovations to scale-up through public or private partnerships. But to create the most impact, we concluded that our role should be to push a few ideas generated elsewhere in the institution, and help folks already doing something innovative do it faster and better. That turned out to be **phase three**. We said we're not going to incubate the ideas, but rather we'd be a platform to accelerate incubation, learn from each other, catalyse external partnerships and mobilise resources.

At the same time, we recognised that we face some really complex problems that the World Bank's traditional approach of lending to governments and supervising development projects is not solving. For this, we needed another type of lab that innovated within the very way we solve problems. We needed a deliberate process for experimenting, learning, iterating and adapting. But that's easier said than done. At our core, we are an expert-driven organisation with know-how in disciplines ranging from agricultural economics and civil engineering to maternal health and early childhood development. Our problem-solving architecture is rooted in designing technical solutions to complicated problems. Yet the hardest problems in the world defy technical fixes. We work in contexts where political environments shift, leaders change and conditions on the ground constantly evolve. Problems such as climate change, financial inclusion, food security and youth unemployment demand new ways of being solved.

The innovation we most needed was innovation in the architecture of how we confront complex challenges. We share knowledge and expertise on the 'what' of reforms, but the 'how' is what we need most. We need to marry know-how with do-how. We need multiyear, multi-stakeholder and systems approaches to solving problems. We need to get better at framing and reframing problems, integrative thinking and testing a range of solutions. We need to iterate and course-correct as we learn what works and doesn't work in which context. That's what we called 'integrated leadership learning and innovation' – **phase four**. It's all about shaping an innovative process to address complex problems working with clients (end-users) and staff (largely technocrats). This is essential for understanding problems, identifying suitable approaches and achieving scale.

Scaling is a complex process – and we don't think about it in the right way

Getting to phase four also made me realise – like a mountaineer that ascends a difficult peak, looks back and realises they could have gone many other routes – that we had not been thinking about scale in the right way.

Many of the hardest problems on the planet defy simple technical solutions. Whether it is climate change, food security or access to clean water and sanitation, these are not challenges where you can identify a specific solution, and then create scale by attempting to get lots of people and organisations to replicate that solution.

Confronting complex problems demands the humility to admit that we don't know the answers when we start and sometimes we don't even know the right problem to work on. If we address symptoms rather than root causes, we can exacerbate conditions. Penalising teachers, for example, for not coming to school may ignore issues related to over-crowded classrooms, transport or meagre wages for educators. If you start with the wrong problem, or you think about problems in the wrong way, you'll certainly propose the wrong solution.

Thanks to the efforts of complexity scientists, we have learnt the differences between complicated and complex systems. The following table[90] sets out these differences, in relation to goals, focus, planning and execution approaches.

	Complicated	Complex
Goals	• Optimal solutions	• 'Good enough goals' to learn from and adjust
Focus on	• Target variables	• Dynamics, feedbacks, relationships, unintended effects
In planning	• Describe what, dictate how • Focus on details • Coordinate everything centrally • Deliberate trade-offs • Solution is often reached through a series of algorithms	• Describe what or how, but not both • Only key details – the fewer, the better • Limit central coordination to what's absolutely necessary • Trade-offs not always foreseeable, and they can shift over time
During execution	• Make sure plan is adhered to • Adjust to make things more efficient • Compliance	• Measure results against all desired outcomes • Don't get attached to any particular course of action • Adjust constantly and learn

It became clear to me that distinguishing complex problems from complicated problems in the way set out this table is essential for identifying appropriate solutions and finding suitable pathways to scale them. The problem is that in international development, we are incentivised to see problems that are complex as if they were complicated – and to deal with them accordingly.

The risk with focusing on complicated problem-solving techniques in complex environments is that we go about our business as metaphorical hammers looking for nails, rather than as solution-seekers looking to partner with local experts to

solve local problems. The solutions feel forced, don't resonate with end-users, and more importantly don't solve underlying problems. A glaring example of this is the construction of the Choluteca Bridge in Honduras. Although the bridge was constructed by the U.S. Army Corps of Engineers in the 1930s and remains technically sound, the road it was connected to moved in 1998 after Hurricane Mitch; today, it's a bridge to nowhere. Though structurally flawless, without attention to shifting realities on the ground, it serves no purpose.

Increasing agricultural productivity in Sub-Saharan Africa is a good example of the same phenomenon in development. If we approach it as a complicated problem, we start with improved seed varieties and try to change agricultural practices (e.g. adding fertilisers). Many calls for an African green revolution are based on this diagnosis. What this ignores, however, is the interplay between farming practice, climate change and resilience

ecology. The problem is complex especially in the context of climate change. I recall a colleague explaining that illiterate farmers in Northern Kenya could remember rainfall patterns for more than a decade and apply them to cropping patterns and rotation. So when outside experts insisted on using a more limited number of high-yielding seeds, farmers resisted since they were playing the long-game (thankfully). They implicitly understood climate variation and insisted that what worked in one area or region may not work in another. They needed to diversify risk. Local expertise and knowledge mattered a great deal.

But if we continue treating complex problems as complicated (i.e. solvable by an algorithm or technical fix), we will continue to prescribe remedies with little regard for context and variation. At the World Bank, we learned over the past 50 years that building roads, dams and schools is not the same as reforming healthcare, improving education or tackling youth unemployment. These are problems that require hypothesis formulation and testing, gathering of feedback, and ongoing processes of adaptation and iteration. There are no instant solutions on tap. We need eyes and ears on the ground, constant tweaking and robust feedback systems that allow us to learn as we do.

Even when complicated solutions to complex problems do work, they don't scale. We've seen mobile telephony and micro-lending spread like wildfire, while toilets and sanitation continue to be unavailable for more than a billion people. We can't impose solutions on people. They have to want them and demonstrate demand through a variety of means.

This is the biggest lesson for scale: the need to differentiate between solutions that can be replicated easily and usefully (say, building a road or delivering a medication) and those that require an understanding of local conditions and require an experimental

approach driven by data, feedback, learning and adaptation (say, addressing basic sanitation in India).

Complex problems require very different methods to solve. You can't replicate a solution to a complex problem. And any one answer is unlikely to have a sustained impact. Promoting efficiency can lead to disastrous consequences because underlying conditions change (as per the 'bridge to nowhere' analogy above) and getting really good at doing the wrong thing is a big risk. Sanjay Pradhan, Vice President of the Leadership, Learning and Innovation Group at the World Bank described the immense complexity of extractive industries in parts of Africa. He described how problems with governance of extractives cut across sectors and require multi-stakeholder approaches that went beyond mere technical fixes. To overcome collusion in the award of contracts among elites, reform leaders from government, civil society, the private sector, the media and parliamentarians were brought together (e.g. in Ghana) in a coalition-building platform to work out – through collaboration and iteration – norms to disclose and monitor the terms of the contract.

Move from scaling solutions to scaling approaches

What would it take to accept that most of the problems we encounter in development require listening better to our clients, learning about technical and political obstacles, and the ability to course-correct when conditions change? That requires flexibility, faster response times and treating our end-users as partners in solving complex problems.

We won't get it right the first time, or the second. But what can we learn from are our failures: What mistakes can we avoid making repeatedly if we share what we learn? And can we create adaptive systems that move toward solutions much more

quickly? Scaling-up what works in complex contexts is less about scaling solutions. Instead, it may have more to do with process expertise – figuring out what problems need to be solved in a given environment – than blueprints based on expert knowledge. What scales is the approach and process by which you develop solutions.

And this requires collaboration and active experimentation in an unprecedented way. That is why we launched the Bank's Innovation Lab. We played with the term 'Co-Lab' because we can't do this alone. But in addition to partnerships, we can learn something from the world of software development. Agile development evolved because the linear model of development was not adequate to address dynamic and evolving client needs. Like software development, global development needs shorter feedback loops and quicker cycle times.

What I'm suggesting is deeply unsettling and counterintuitive in an 'expert-driven' culture. When you put subject matter experts in a room, they want to figure out as many things as possible before they start. They want blueprints, detailed budgets and clear success indicators. They want to minimise risk. But innovation is about managing risk and navigating uncertainty intelligently. I think you start with success indicators but then use hypotheses and appropriate analytics to test multiple solutions at the same time. You fail fast and fail forward. You learn fast and iterate. You document what you learn, share it with the world and look for insights from wherever you find them.

But how do you do this in an environment designed to minimise risk and prevent failure with complex procurement systems, for example, which require you to know many things before you even start a project? It's a very real constraint when you're trying to be agile and don't know in advance what you will need to deliver a given result. We need to be held accountable, but there is a

difference between being held accountable for a result and being held accountable for following a strict set of process steps. We need more of a culture of honesty and results to replace a culture of fear and compliance to make this work.

At the Bank, we talk about political economy and understanding incentives and levers for change. This is both an art and a science. We have dozens of examples of where we have succeeded (although perhaps not the first time), where we have made progress and we have learned what to try and what not to do.

If we get this right, we can move the needle on solving the hardest problems in the world. It's not about getting the answer right the first time or developing 'cookie-cutter' solutions but about using a process that gets us closer to better solutions better adapted to end-users.

There are many challenges in the world that defy easy answers. We need bold experimentation and a willingness to adapt, listen and learn to solve them. The problems we confront at the World Bank and in development more broadly are more like playing 3D chess than checkers. There are multiple variables, conditions constantly change, and many times the answers don't scale.

We need more than 'know-how' to solve complex development problems; we need 'do-how.' We need to find people who have relevant experience and learn from them. It's about cultivating master chefs who know when to use the cookbook and when to improvise. What we need to scale is not a particular solution or development prescription but a repeatable process that is human- centric, disciplined and data-driven. We need to consider political, social and cultural as well as technical factors when problem solving with our partners.

Today, we can tap into a global talent pool and invite problem solvers from every corner of the world, and from every discipline. After all, it wasn't a geographer who figured out the conundrum of longitude. It was a clockmaker who recognised a pattern. People from many disciplines can recognise patterns of different kinds and they can contribute towards ending poverty if we invite them to join us. We need to enlist non-traditional actors and develop a systematic process to engage expertise wherever it is to test and develop new solutions.

The World Bank is an important player in the ecosystem of global development, but there are many more players today than there were in 1944 when the Bretton Woods institutions were created. The World Bank Group has unique access to governments all over the world through lending operations and it can leverage this privileged relationship to bring multiple stakeholders to the table to address the toughest problems on the planet.

But we must learn how to lead from the middle. Gone are the days where the Bank could sit down with a few sovereign governments alone and solve complicated problems. Today's challenges require working collaboratively with civil society, the private sector, technologists, governments, investors and foundations to exploit their respective comparative advantages.

We know the world's most challenging problems are moving targets so we can't over-analyse before we act. We need a new model but we won't know in advance what it will look like – the urgency of the challenge is our call to action.

While solutions may not always scale, the processes by which we experiment, learn and adapt can scale. I think this is the fundamental innovation challenge for global development institutions in the 21st century. Let's hope we can rise to meet it.

What to take away from this...

- If we continue treating complex problems as solvable by replicable, technical fixes, we will continue to prescribe remedies with little regard for context and variation. Complexity science allows us to distinguish between complicated and complex systems, and therefore identify appropriate solutions and find suitable pathways to scale them.
- Promoting efficiency can lead to disastrous consequences because underlying conditions change and we risk getting really good at doing the wrong thing. We need to differentiate between solutions that can be replicated easily and usefully, and those that require an understanding of local conditions and an experimental approach, driven by data, feedback, learning and adaptation.
- Scaling-up what works in complex contexts is less about scaling solutions and more to do with scaling the approach and process by which you develop solutions. It's not about developing blueprint solutions based on expert knowledge, but about using a process that is end-user-centric, disciplined, data-driven, and therefore gets us closer to better solutions.
- We need to shape innovation processes to address complex problems by iterating and course-correcting as we learn what works and doesn't work in different contexts, as well as documenting and sharing our learning with the world.

This essay looks at the opportunities of digital technologies and the potential problems of over-reliance as a development panacea. It uses M-Pesa to highlight the potential benefits and challenges of digital development, and argues that the effective scaling of digital tools will involve disrupting traditional development efforts, enabling communities to do work on their own terms and in their own interests.

Horizons or mirages: exploring the potential and limits of digital innovations

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Digital technologies have become popular in development and humanitarian work. It seems impossible to go a single day without a new app or platform or innovation being announced, with high expectations for how they will transform the lives of people in developing countries. Evidence suggests that digital technologies are central to the new innovation movement described by all of the contributors to this volume: over half the applications to various innovation grant funds are said to be for digital technologies. The Principles of Digital Development,[91] laid out in 2015, and now signed up to by many international organisations, are increasingly being seen as synonymous with the principles of innovation for development.

One of the enduring questions posed to digital development efforts is how much they truly transform the nature of and approach to development taken by international organisations. There is a surprising amount that we still don't know in this area.

Work on information communications for development (or ICT4D) has a history spanning several decades, but practitioners have been described as 'intellectually jogging on the spot'.[92] One of the leading scholars in the field, Richard Heeks of Manchester University, has described most projects as resulting in *"partial failure, sustainability failure or complete failure"*. And a founder of Microsoft Research in India has argued that much work in this area is 'empty sloganeering that collapse[s] under critical thinking'. And the recently published World Development Report[93] on Internet for Development has shown that while digital technologies are spreading, the benefits are not, and in fact there may be aspects of the digital revolution that heighten inequality. Our own work on innovation within international development organisations has left us questioning the extent to which the truly radical implications are being explored: instead, digital is being used in incremental ways, to enhance efficiency, or to streamline existing business models, but rarely to question them.

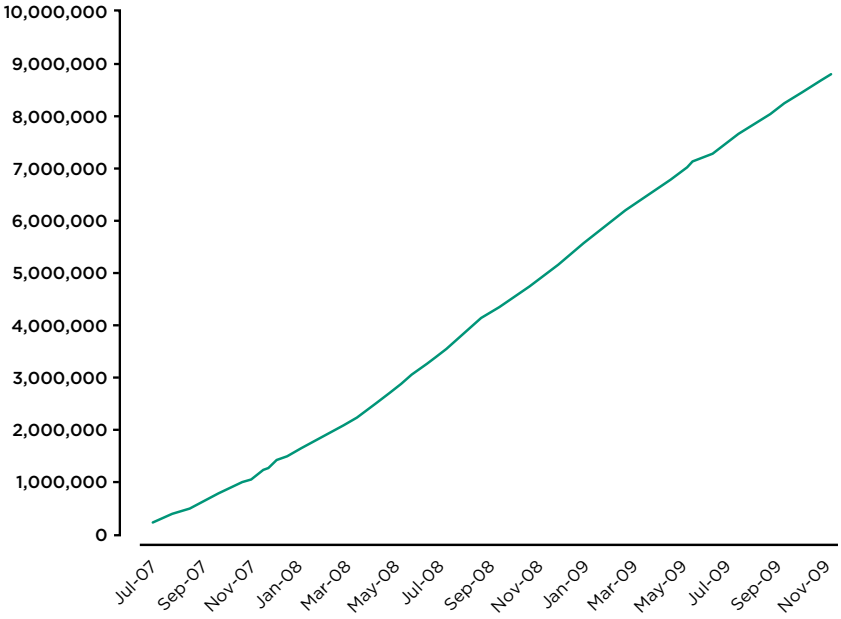
As a UN/Vodafone Foundation report found that digital approaches tend to reinforce existing bureaucracies and power structures, and the development sector tends to use these approaches in vertical and hierarchical ways rather than tapping into their horizontal, empowering potential.[94]

Given this fairly comprehensive set of criticisms, why should anyone put any faith whatsoever in digital development initiatives? It appears that, unlike recalcitrant schoolchildren, where the few give the rest a bad name, in ICT4D there are a few successes that give the rest a good name. These approaches have been developed in parallel to mainstream digital development efforts, but typically do not originate within international organisations. Instead, they grew from locally-grounded, contextually-specific processes of technological adaptation to enduring problems that affect large parts of the population.

Take M-Pesa, one of the developing world's genuine digital success stories. The story begins in 2007, when Kenya's largest mobile phone operator, Safaricom, launched a new system called M-Pesa ('pesa' being the Swahili word for cash). The original intention was for M-Pesa to be a platform for customers to receive and send money and for microfinance organisations to improve their process and repayment efficiency. Subsequently, it was seen as having potential as a peer-to-peer payment service provider. The rest is innovation history.

Within two short years, the user-base had rocketed to almost nine million people nationally (Figure 4) and in 2013, M-Pesa transacted $22 billion, amounting to 50 per cent of Kenya's GDP. It completes more transactions in Kenya each year than Western Union does across its entire global network.

Figure 4: **MPesa Growth**



M-Pesa has become a model for mobile money applications around the world, and has brought financial services to a vast segment of the Kenyan population that would not otherwise have had access to a bank account. At the time of writing, M-Pesa agents in Kenya outnumber ATMs by a factor of ten. The perspectives of customers are clear: *"almost all [customers] surveyed [responded] that the service was quicker, faster, safer and more convenient than any alternative money transfer method; 84 per cent of respondents claimed that losing access to M-Pesa would have a significant negative impact on their life."*[95]

However, M-Pesa has not achieved the same degree of success in other countries – although other mobile money systems have taken off. The reasons why this is the case underpin a key message for digital innovation generally, and for digital development efforts in particular. Analysis of the factors behind the success of M-Pesa identify that although the design, delivery and socio-cultural contexts were all crucial, it is the latter that are least often mentioned or considered. It turns out that its success was attributable more to its fit with existing behaviours and relationships in Kenya, with its societal patterns of close-knit family life and urban-rural migration. There were in fact informal money markets in Kenya long before M-Pesa, through networks called halawa, which enabled agents to communicate with each other across long distances and provide cash brokerage services.

Over time, this system evolved to meet the needs of a highly dynamic, urban-rural population. By the year 2000, people were using mobile phone airtime as a proxy for cash transfer. As one review of the M-Pesa approach found, the system doesn't offer a structure in its own right, but instead a flexible tool that can be used in a whole range of different informal transactions across individual social networks, revealing the vast range of interpersonal transactions Kenyans undertake that are endemic

to their financial lives.[96] The review found that M-Pesa's success was directly attributable to the fact that its use was embedded in and profoundly shaped by social relationships and behavioural patterns.

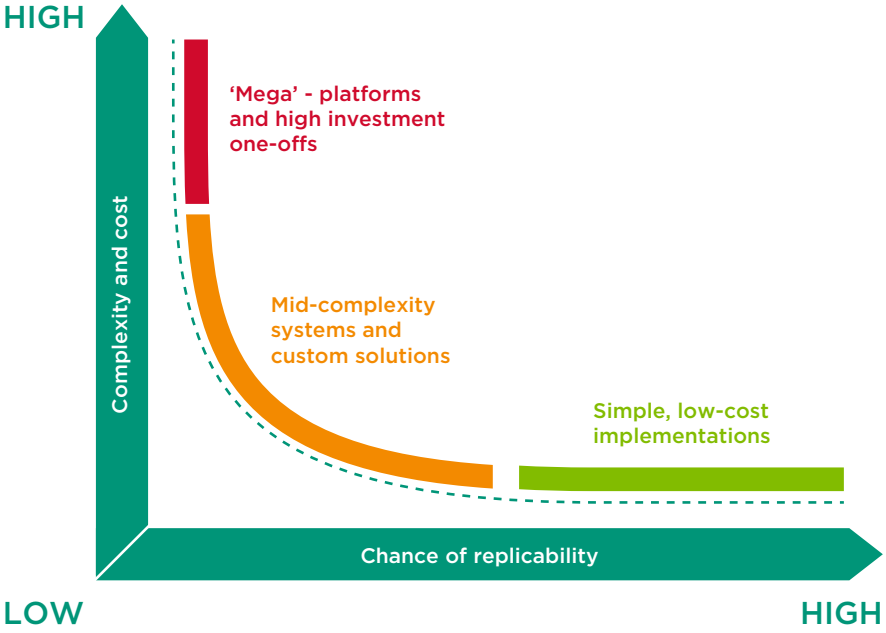
Today, it is used in a dizzying variety of ways: to pay school fees, send pocket money, pay for drinks in bars, make informal loan repayments, send money for weddings and other social funding drives, pay for public transport, and more. This is a testament to the power of the tool to harmonise with the self-organised, networked and dynamic transactions that characterise Kenya's informal economy. But M-Pesa has also brought things the informal economy didn't have: security, connectivity and volume.

Interestingly, M-Pesa received £1 million in matched funding from an international agency, DFID, and a commercial mobile operator, Vodafone, to get going, but once the process had started it became self-sustaining.[97] Could DFID have anticipated this success upfront? It seems unlikely.

Another example is FrontlineSMS, developed by one of the authors. The earlier desktop version is a free open-source piece of software that can be used to distribute and collect information via text messages. Or to put it another way, if you have a laptop and a phone (or a USB modem) you can create a two-way group-messaging hub anywhere there's a mobile signal. Importantly for many development efforts, it can work without an internet connection, and was originally developed by Ken Banks in 2005 to help conservationists keep in touch with communities around Kruger National Park in South Africa. While that particular implementation stumbled, at the time increasing numbers of people were beginning to recognise the power of the mass-messaging functionality. FrontlineSMS has since spread to over 170 countries and has been used in everything from reporting human rights abuses, monitoring elections, crisis mapping and disease response. Like M-Pesa, FrontlineSMS's power comes from its ability to tap into basic social dynamics, and its potential to be adapted to different contexts and needs.

Indeed, it is that flexibility that has been at the heart of its success, borne out by the fact that a platform developed with conservation in mind has been used in almost all other sectors of development since. It was also squarely aimed at the 'long tail' of mobile users: the many grassroots non-profits and social actors – many in the developing world – who didn't need outside expertise or help, but did need a tool to allow them to implement their own projects and solutions based on their own deeper understanding of the problem.

Figure 5: **Social mobile's long tail**



Source: www.kiwanja.net/wp-content/uploads/2009/03/socialmobilelongtail.jpg

FrontlineSMS was also built around an appropriate technology ethos, not only making use of the technologies people had in their hands but also a data channel they were most comfortable with – SMS. It was based on a 'pull approach': users driving the whole process based on their thoughts about how the platform could best help them. Through their collective use of the platform, tens of millions of people – their own target audiences – have benefited. That all said, despite its success it is revealing that few tools, if any, have been built since with any of this in mind – but more on that later.

Further examples can be found outside the realms of corporations or activists. In India, a digital biometric identification system has been rolling out since 2009, providing every individual with a unique ID. Academic research prior to the launch of Aadhaar found similar projects to be *"too complex, technically unsafe, overly prescriptive and lacking a foundation of public trust and confidence."*[98] This scheme, which now covers 92 per cent of the adult population, has been used in a wide variety of ways: to open bank accounts, to purchase mobile phones, to prove identities and addresses and, most significantly, for the disbursement of social welfare payments. It turned out that many people wanted to be registered because it gave them official recognition and conferred citizenship status, offering protection against state official corruption and other potential vested interests. The World Bank estimates that Aadhaar-linked disbursements of fuel subsidy payments has saved India a billion pounds annually through efficiency savings, reduced corruption in the welfare system, and addressed other forms of financial leakage.[99]

These transformative digital technologies have some common qualities.

First, they all focused on appropriateness and relevance to culture and context, and to specific human needs that were grounded in that context – the addressing of which had the potential to generate development gains.

Second, they can be used by poor people and communities to meet their needs directly. Third, they are not controlled by any single organisation, nor do the benefits accrue disproportionately to any one organisation. Fourth, they often have empowerment and inclusion as key goals, or at the very least, a means by which to achieve their goals. Fifth, they are all platforms which

enable the development of an infinite number of solutions, rather than just a single, specific solution. This means they can enable adaptation and iteration by those seeking to solve specific challenges using technology, often taking the tool in new directions and to meet new needs. Sixth, and finally, these are all tools that have quite clearly grown to considerable scale, nationally and globally, and in doing so, have led to changes in whole systems.

It seems clear that making systemic change happen through digital development requires these kinds of approaches to become the norm and not the exception. But achieving this will not be easy. Although the formal system can support such approaches from a distance, as DFID did with M-Pesa, there is an irony that many larger development institutions may feel threatened by genuinely empowering tools and may resist or hold back on their development as a result. Behaviour change is inherently more challenging than the technology ever is.

Indeed, issues of power and control abound. As noted above, traditional development bureaucracies have struggled to deal with the potential for more open-source, distributed, contextually-relevant approaches, enabled by digital technologies. By contrast, the most transformative and scalable successes are precisely those that are open source and contextually grounded.

So what might it take to make such approaches the norm in digital innovation?

The lessons are, in fact, evident in many of the other essays in this volume.

- There will need to be changes in how such efforts are funded and supported by donors, with more of a hands-off, enabling role, rather than a directive, contractual relationship.[100]

- There will need to be much more attention paid to bringing local and national voices and perspectives in at the outset, not just as data sources but as active partners and primary users of digital innovations.
- There will need to be much more attention paid to how new ideas are brought in from outside the sector, from unusual suspects.
- There will need to be a reduction in the sector's obsession with innovation, and a realisation that more often than not older, less 'innovative' solutions might be better at solving certain development challenges.
- Finally, there will need to be approaches to scale that considers social, behavioural and cultural dynamics as the central challenge.

This last point is the one that stands out as most prominent and significant, and is worth expanding upon in closing. The work of Brian Arthur suggests that successful innovations start with observations of natural phenomena, whether physical, biomedical, or social.[101] Innovations then seek to replicate or mimic the power of these phenomena – in a process that is referred to as 'deep craft'. Deep craft on particular issues cannot be easily taught; it needs to be absorbed through in-depth, long-term engagement and mutual learning. This of course demands all of the other enablers listed above are also in place. One of the authors of this paper has regularly argued that we need more anthropologists in international development, specifically because their approach encourages and provides the deeper, socially-focused, longer-term, more meaningful learning that we require.

As Bill Gates has argued, *"If technology is going to improve the lives of the world's poorest, it must be grounded in a deep*

understanding of human behaviour and an appreciation for cultural differences."[102] This understanding and appreciation is indeed the deep craft described above, and it may well be the most necessary capability to strengthen if digital development efforts are to succeed. On the basis of the work and lessons to date, the sooner the development sector takes on board this message, the better.

What you should take away from this...

- Digital innovations should be seen as flexible tools that enable the development of an infinite number of solutions, rather than single, specific solutions. They should enable adaptation and iteration by those seeking to solve specific challenges using technology, often taking the tool in new directions and to meet new needs.
- Attention needs to be paid to bringing local voices and perspectives in at the outset, not just as data sources but as active partners and primary users of digital innovations. Users should be driving the whole process, based on how they believe the tool could best meet their needs and allow them to develop and implement their own solutions.
- There needs to be a realisation that more often than not, older less 'innovative' solutions that are built around an appropriate technology ethos might be better at solving certain development challenges.
- Approaches to scaling digital innovations must tap into and be embedded in social relationships and behavioural patterns. Such appreciation for cultural differences and context requires in-depth, long-term engagement and mutual learning, and is crucial if digital development efforts are to succeed.

Gavi, the Vaccine Alliance, has made huge strides in improving access to vaccines in poor countries. This article outlines how achieving such transformative change in vaccine delivery demands both a systemic approach as well as a focus on national ownership.

The system is the innovation: how to support countries to enhance and expand vaccine delivery systems

Lauren Franzel is Senior Specialist, Policy and Market Shaping, and Alan Brooks is Director, Health Systems & Immunisation Strengthening, at Gavi, the Vaccine Alliance.

One in five children worldwide are still not receiving a full course of the most basic vaccines. Gavi, the Vaccine Alliance (Gavi) was set up in 2000 to redress this inequity. Since then, we have deployed a unique public-private business model to help to improve access to new and underused vaccines for children living in the world's poorest countries. We have helped countries immunise more than half a billion children, prevented seven million deaths,[103] and have been ranked as a world-leading development partner by developing country policymakers and practitioners. Core to these achievements has been Gavi's focus on different kinds and levels innovation (see Box 10).

Box 10: **The 4 P's of innovation**

According to leading innovation scholars Professor John Bessant and Joe Tidd, innovations can be classified as one of four 'P's.

Product innovation: The most commonly understood form of innovation is that which introduces or improves a product or service – a change in what is offered to end-users.

Process innovation: Innovations can also focus on processes through which products are delivered or indeed created.

Position innovation: The third focus of innovation involves repositioning the perception of an established product or process in a specific context. Position-based innovations refer to changes in how a specific product or process is perceived symbolically and how they are used.

Paradigm innovation: The final 'P' refers to innovation that defines or redefines the dominant paradigms of an organisation or entire sector. Paradigm-based innovations relate to the mental models which shape what an organisation or business is about.[104]

We have supported **product** innovations, working with manufacturers to simultaneously build capacity and improve the programmatic suitability of vaccines. We have led **process** innovation by forecasting and pooling demand for vaccines from 73 countries. We have led **positioning** innovations, in terms of how vaccines are communicated and understood by decision-makers. Through all of this work, we have brought down the total cost of immunising a child with pentavalent, pneumococcal and rotavirus vaccines from $35 US dollars to $22 US dollars, over the last five years. And we have led **paradigmatic** innovations, using our purchasing power to create and shape new vaccine markets, stimulate competition and create more sustainable and nationally-owned vaccine delivery systems.

Gavi and its partners have made real progress using innovation to improve access to new and underused vaccines in poor countries – an approach we will continue and build upon. However, the challenge we now face is twofold. The first issue, which we are going to focus on most in this article, is the challenge of systemic innovation. This goes beyond the four 'Ps' outlined above and seeks to establish a new and enhanced system for global vaccine

delivery. The second, which we will address at the end of this article, deals with the vital importance of national ownership for meaningful change.

Most countries receiving Gavi support initially set up their Expanded Programme on Immunization (EPI) four decades ago, with the goal of providing universal immunisation for all children, and they now reach more than 80 per cent of children worldwide with at least three doses of routine infant vaccines, such as diphtheria-tetanus-pertussis (DTP). While the supply chains established through EPI have been hugely successful, helping to significantly increase immunisation coverage in the poorest parts of the world, they are often outdated. Additionally, country demand for new vaccines is projected to grow dramatically. By 2020, countries receiving Gavi support are projected to be required to manage four times the volume of vaccines and six times the number of doses.[105] Existing vaccine supply chain architecture and cold chain systems, and the management and data systems that support them,[106] will require significant strengthening to cope with these projected increases.

The expansion and evolution of today's immunisation programmes is already requiring significant operational and structural changes in national immunisation supply chains to achieve better performance. Results from Effective Vaccine Management (EVM) assessments in 67 countries since 2010 indicate that less than one-fifth of countries have met the World Health Organization (WHO) recommended 80 per cent score across all nine categories of vaccine supply chain management. Only 23 per cent of countries achieved adequate temperature control for vaccines; 23 per cent of countries have functional vaccine stock management systems; and 24 per cent of countries have effective vaccine transport systems.

Of the facilities in Gavi-supported countries that need cold chain equipment, 20 per cent do not have any. Among those that do, 20 per cent of the installed devices do not function. At facilities where equipment does work, in many cases it works very poorly, with an estimated 60 per cent running the risk of damaging vaccines through exposure to excessive freezing or unacceptably high temperatures. We also see supply chain designs of decades past, which once served us so well, now no longer suitable for modern needs. When taken together with a limited means of tracking data, this can make it difficult to manage and optimise vaccine stock levels, track progress and monitor outcomes. However, as part of our Alliance's supply chain strategy, Gavi now aims to apply the same kind of successful business model that we used with vaccines to help equip up to 135,000 vaccine supply chain points across Gavi-supported countries with reliable, high-performing cold chain equipment.

The ambition above builds upon a realisation that the same infrastructure that has enabled us to radically increase childhood immunisation coverage, and deliver innovative solutions, is itself in need of transformation if it is not to prevent us from finishing the job. And the job is not just about coverage. For Gavi, success is about boosting immunisation coverage and equity, both within and between countries in an efficient and sustainable manner. One of the challenges in achieving this is that progress in well-served regions can boost national coverage but leave marginalised populations untouched. The children still missing out on the benefits of vaccination are the ones that are hardest to reach, living on the edge of society, be it in inaccessible remote rural areas or in sprawling densely-packed urban slums.

The high cost of efficient and reliable supply chain equipment is one reason we see inequities in immunisation coverage. For the poorest countries in the world price is a major obstacle. It can

often seem more economic to keep running existing equipment – however defective – until it breaks down, or to purchase equipment which has cheaper upfront costs but is less reliable.

Until supply chain systems are improved, we will see stock-outs, avoidable wastage, inadequate cold chain capacity and potential administration of compromised or expired vaccines increasingly threaten the coverage, equity and cost-effectiveness of immunisation programmes. And this will continue to happen despite innovations in products, processes, positions and paradigms. We have reached a certain level of scale and success through our existing approaches to innovation. What we need now is not just product innovation in terms of improved vaccines, or even paradigm innovation in terms of sustainable markets. We are now in need of **systemic innovation**, to modernise and extend the aging supply chain infrastructure used to deliver vaccines to children in the world's poorest countries.

To achieve our goal of systemic innovation, Gavi has identified five priority issues that have the greatest impact on in-country supply chain performance:

Supply chain leadership: involves establishing human resource policies, education programmes, and training and supervision systems to ensure that leaders and professionals with strong supply chain management capabilities are in place to manage distribution and supply chain performance.

Supply chain continuous improvement plans: involves comprehensive management plans, incorporated into comprehensive multi-year plans, and resourced through Health Systems Strengthening (HSS) or other funding. A long-term continuous improvement cycle via the new comprehensive process (cEVM) will be applied to these plans, based on a cycle of Earned Value Management (EVM) preparation: assessment, planning, implementation, and reassessment.

Supply chain data for management: addresses definition of standards, collection and use of high-quality, timely and relevant data for routine immunisation (for example, avoiding a stock-out when a delivery is delayed) and strategic decision-making (for example, procuring the right equipment based on an up-to-date inventory).

Supply chain and cold chain equipment: addresses the development, selection, deployment, installation, proper use and maintenance of refrigerators, freezers, cold boxes, cold rooms, temperature monitoring devices, and other equipment used to keep vaccines at proper temperatures.

Supply chain design and structure: involves looking holistically at the design of the system and finding opportunities to improve network structures and their efficiency. This could include reducing the number of intermediate storage levels in a supply chain; outsourcing specific functions, such as fleet management or cold chain equipment leasing to private or parastatal organisations; and shifting from collection to distribution systems with efficient supply routes.

How are we planning to do this? It turns out that the cold chain equipment market can be transformed by using tools similar to those we have used to drive change in the vaccine marketplace. In order to reach the marginalised communities described above, we need to be able to drive creative **products**. For example, in some of the most remote areas, unreached by existing vaccine delivery systems, there is often no reliable energy source, bar one: the sun. Solar-powered fridges can help to extend the cold chain to places that were once thought unreachable. We can also make good use of passive cooling devices that keep vaccines cold for 30 days without the need to replace ice packs. In addition to this, there are novel vaccine carriers, cold boxes and freezers. We also need better **processes**, especially in relation

to repair and maintenance of this equipment, but also for data management and improved management of the supply chain. We need **positioning** and informational innovations, to advocate for higher standards, investment in necessary people skills and a focus on results achieved through improved decision-making. And we need new **paradigms** of innovation, which are based on the country-specific strategic re-design of the system.

With this in mind, and building on our experience in vaccine-specific innovations, we have created a platform called the Cold Chain Equipment Optimisation Platform, which seeks to apply market-shaping strategies to accelerate the upgrading of equipment. This encourages manufacturers to scale-up production, stimulate innovation and drive down procurement costs in the countries that need it the most.

Of course, none of this is easy. Some of the emerging lessons the Alliance has learned so far include:

- **Lesson 1: To drive systemic innovation, we have to be able to see, engage with and understand the whole system**. However, this is difficult, if not impossible, to do using traditional research and scientific methods. For example, there has been work led by researchers at the University of Pittsburgh[107] to design new computerised systems, building on system dynamics principles. These simulations to analyse the system enable us to understand patterns of interaction across the supply chain, and make better decisions about how the system can be sustainably enhanced.
- **Lesson 2: Evaluation is vital, and increasingly needs to be in real-time**. To make systemic innovation work we need different kinds of evidence. We are increasingly finding that this means building on a solid base of traditional retrospective evaluations that ask, ‘What did and didn’t work, and why?’

and adopting a more prospective approach that asks 'What is working and how'. This is especially important as real-time evaluations are seen as a vital complement to in-country capacity-strengthening efforts.[108]

- **Lesson 3: Ensure interdependence with other system-level change efforts**. The vaccine delivery system is interdependent with other systems within countries. We have learned the benefit of making efforts to integrate specific supply chain improvement and innovation efforts with other health commodity supply chains. This ranges from simply being aware of what is happening in other settings and working to coordinate deeper collaborations, such as merging data collection and management systems, to establishing shared inventory control and distribution.
- **Lesson 4: Achieving systemic innovations requires public, private and social innovation approaches to work in tandem**. We are increasingly finding that it is the balance between different modes of innovation that drive systemic changes. For example, governments can innovate new procedures and frameworks, the private sector can drive new technological approaches, and the not-for-profit sector can ensure we reach the poorest and most in need. Not only do we benefit from multiple perspectives in innovation, but it also helps to have our approach scrutinised from multiple perspectives.[109, 110]
- **Lesson 5: Don't overlook the importance of the enabling environment and enabling relationships**. Systemic innovation is facilitated and accelerated by Gavi's unique structure and approach. We are able to build upon the policymaking, convening power and standard-setting abilities of The World Health Organization and UNICEF and the advocacy, proposal review and funding abilities of Gavi itself. This enables us

to establish a powerful enabling environment for supply chain improvement within countries. At the heart of this enabling environment are the relationships, built on trust and engagement, between different stakeholder groups, with the national government as the central player.

This last lesson brings us to our closing point: in Gavi's work on systemic innovation, we recognise that such systems, and the supply chains they build on, are primarily the responsibility of national governments. Each supply chain has a different set of capabilities, opportunities and challenges.

To this end, Gavi is supporting more than 20 of the wealthiest countries it works with to transition out of our support and begin to fully self-finance their national immunisation programs. We do so because we understand that ultimately delivering better vaccine systems globally demands country-level ownership and leadership. We have found that in vaccines – just as in international development more generally – this is a path to truly transformative and systemic innovation.

What to take away from this...

- New research and scientific methods are required to engage with and understand whole systems. Real-time evaluation and evidence is also vital.
- Usually the system you are trying to change is interdependent with other systems within countries, and efforts should be made to integrate these. This can range from a basic level of awareness of what is happening in other systems, to forming deep collaborations or establishing shared processes and procedures.

- A multi-sector approach to systemic innovation is crucial in order to provide ideas and feedback from a range of perspectives in innovation. Creating and establishing relationships between different stakeholder groups helps create an enabling environment for systemic innovation.
- Delivering transformative and systemic innovation ultimately demands country-level ownership and leadership.

Conclusion

The path ahead: development as innovation

Geoff Mulgan is CEO of Nesta.

Why does innovation matter for development? In this closing essay I suggest a few answers. I show why innovation is increasingly seen as integral to any process of development. Development doesn't only involve adoption; it also involves the active adaptation and nurturing of new ideas. I show why this recognition has prompted greater interest in the role of institutions for innovation in developing countries, not just in science and technology, but also in society and government. I then address the role that innovation can play in reanimating a development industry that faces many challenges and criticisms – the central focus of the 16 essays that have been brought together in this collection. Finally, I end with reflections on the relationship between innovation and freedom.

Innovation as integral to development

According to economists some three-quarters of all economic growth comes from the invention and adoption of new ideas.[111] Firms innovate in order to survive. The same is true of armed forces, political parties and charities, governments and research labs, social movements, grassroots inventors and political activists: all attempt to create new ideas that will stick, so that they can survive, and, hopefully, thrive.

This pattern – which begins with creativity, experiment and trial, then moves through some kind of testing in the real world, and then leads to the spread of a minority of new ideas that work – is found to varying degrees in farming practices, medicine, and the running of bureaucracies. Indeed, evolutionary processes that link mutations, selection and then replication, are a fairly universal pattern.

Traditionally, development was seen as involving only the last part of this process – adopting ideas that had been born and proven elsewhere. Unilinear theories of social development are less popular than they once were. But they are still implicit in much of the development literature. If any society could be thought of as made up of many 'production systems', which produce clothes, learning, health, housing or energy, then development was about bringing each system closer to what economists call the 'production frontier', by adopting the best available methods. This was true of both primary activities such as mining, curing or teaching, and of secondary ones, such as designing markets or legal systems, or running governments.

There were always many arguments to be had about what counts as 'best', or what's affordable, or what's appropriate at different stages. But a great deal of the daily reality of development in a town in Sumatra or a city in Tanzania could be understood in these terms.

This perspective now looks radically incomplete. While it's good to borrow from others, and all of human history has involved copying from neighbours and enemies, adoption is never straightforward. Instead, adoption works best when it's allied to the capacity to adapt and create, whether the focus is on siege machines and irrigation methods, or mobile phones and solar

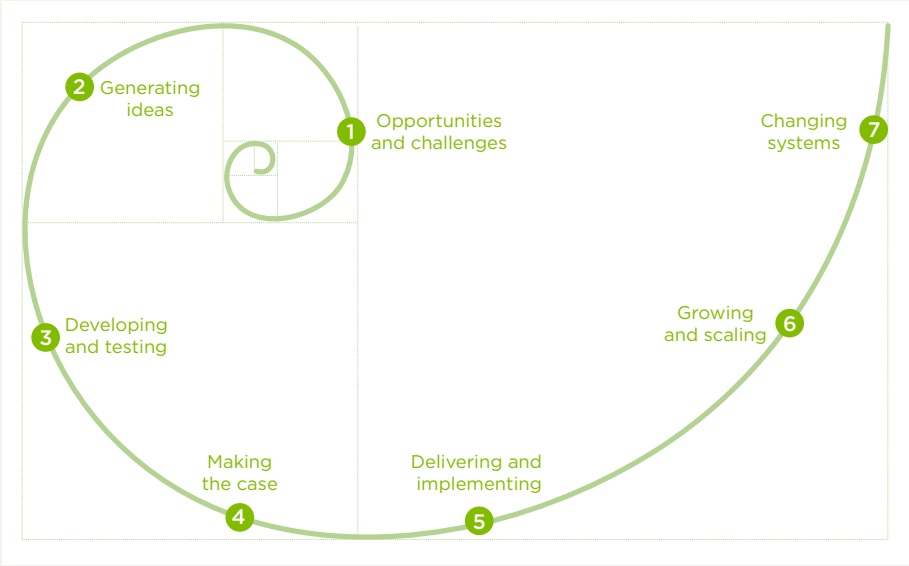
power. The best innovators are also often the best adopters, and vice-versa. Both require a flexible mindset that's hungry to learn, experiment and tinker.

The toolkit – how to support innovation

If innovation matters, and is no longer a monopoly of the rich world, attention has to turn to how it can best be supported. Innovation is often talked about in very airy, over-generalised ways. At Nesta we use a simple framework to encourage more precision on the different phases that can be found in almost any innovation process, whether in a field such as medicine, or in business, and look at how these can be supported.[112]

These processes start with the ability to observe and listen, understanding changing patterns of need (such as the spread of Ebola) or new opportunities (such as the ubiquity of smartphones). Next comes the generation of ideas, where more, and more varied, tends to mean better. Then the next stage looks at evidence – discovering whether ideas really work. If they do, they can be put into practice, whether in the work of a community organisation, a part of government or a business. If they're really good they can be scaled or spread. Finally, the best innovations of all prompt a rethink of whole systems – from systems of food production to money.

Figure 6: **Social Innovation Spiral**[113]



This picture is very stylised. The real world of innovation is messier than this, full of jumps and loops, as well as brick walls. But it's a helpful device for being more precise about which types of action and support work best for which stages, and the essays in this collection show just how rich the variety of methods in use at different stages now is.

So, for example, competitive markets are good at implementing ideas, but ill-suited to fundamental research. Design methods can be excellent for generating ideas, but are often much poorer at helping ideas fit with organisational and economic constraints. Social investment methods are excellent for scaling some kinds of innovation, but poorly suited to early-stage discovery. Formal research methods have a role to play at every stage, but really come into their own when mature ideas are being evaluated.

These varied capabilities are now much stronger, and more widely distributed, than they were, which is one reason why innovation has become much more multi-polar, rather than being a linear emanation from a few developed centres. East African mobile money, Chinese supercomputing, Indian software, Brazilian models of participatory budgeting – all, in their different ways, are exploring production frontiers as well as adapting ideas born elsewhere.

The role of policy

As innovation has come to be seen as more integral to development, attention has turned to the work done by specialised institutions – agencies, funds and labs – that specialise in spotting, nurturing and growing good ideas. Many of these drive scientific invention, and its translation into useful technologies. Countries like China and India have set ambitious targets to increase spending on R&D, and have pushed at the frontiers, whether for genomics (in the case of China) or affordable space technology (in the case of India).

Nesta has documented the changing methods used by governments around the world, from Silicon Valley to Germany, China[114] and India[115] to Brazil, partly to help governments adopt the tools best suited to their needs. The politics of innovation can be complex: sometimes motivated by glory, sometimes reflecting capture by very special interests, and often dominated by the military.

Yet some of the tools are well-supported by evidence, and governments can draw on this evidence to decide whether they should follow other countries in adopting R&D tax credits, technology transfer offices in universities or reforms to public procurement.[116] Other methods, by contrast, have had relatively little serious scrutiny (which is why Nesta set up the Innovation

Growth Lab, now backed by a dozen countries, to rigorously test methods for supporting entrepreneurship and innovation).[117]

A generation ago, innovation was mainly talked about in relation to technology, whether in the big science form of rockets and missiles or the more barefoot form of intermediate technologies. But one of the most intriguing patterns of the last decade has been the spread of innovation methods to new fields. Some governments, for example, now apply innovation methods to their own operations, as a way of breaking free from the constraints of 19th- and 20th-century bureaucracy. There are some very big examples, such as India's UID project, and hundreds of i-teams and labs within national and city governments, from Peru to the Philippines, weaving together more creativity, more attention to evidence and data, and better routes to scale.[118] They're important as tools for driving up productivity, and improving the ability to solve problems. But they're also important because of the culture they bring: more open, humble and collaborative than the traditional ministry.

Innovation in the development industry

As innovation has become more integral to how we think about development, the development industry has itself come under more intense scrutiny. It's not short of creative people. But it has been slow to apply innovation methods to itself, whether in its more direct roles (such as responding to civil wars or famines), or its more indirect roles (such as supporting schooling or healthcare, law or governance).

This is now beginning to change, and the development industry is full of initiatives with the word innovation in them: the Global Innovation Fund, UNICEF innovation labs, Development Innovation Ventures and many others. These are situated at varied places along the innovation spiral – some very much about

generating ideas (such as the use of human-centred design), some about evidence (such as Innovation Poverty Action or Results for Development[119]), and some more focused on scaling (such as development impact bonds).

It would be too soon to claim a coherent, systematic new model of development. But there are some common themes. The general ethos is one of open innovation – opening up questions and challenges to all-comers, rather than directing resources purely to elite universities or established research centres. There's an emphasis on people power, and democracy, in its widest sense, whether that means more involvement of citizens in designing and running services or more formal experiments with participatory budgeting and democracy. Fuelling these is a burgeoning interest in cheap and ubiquitous digital technologies, from smart phones and satellites to machine learning, and new ways of organising money, from grants and loans to equity and bonds.

One of Nesta's roles has been to help the development world use and adapt tools and ideas of this kind, and to adopt insights from beyond the ranks of the usual suspects. These tools include challenge and inducement prizes (used, for example, to develop renewable energy for refugee communities, or to tackle antibiotic resistance[120]); accelerators to improve the quality of business startups (spreading, for example, across India);[121] and open data programmes to help citizens extract the greatest value from previously hidden public information. We've developed toolkits and training to demystify innovation and grow skills, helped by publications like the DIY toolkit[122] and guides to prizes[123] or the use of evidence. Reflecting our own work – which involves close collaboration with big companies (such as Google or Pearson) as well as startups, governments and NGOs – we have tended to emphasise the virtues of working across organisational and sectoral boundaries.[124]

None of these methods is a panacea, and practitioners are right to be sceptical of Silicon Valley billionaires with an app to solve poverty, and overpaid designers jetting into a poor country to solve malnutrition. Innovation is a field that's all too prone to hype, and fads, and what's newest is certainly not always best. But without systematic and deliberate innovation, any field is bound to stagnate, and to miss out on opportunities.

Practice leading theory

One of the intriguing implications of these emerging approaches is a radically changed relationship between theory and practice. Until relatively recently, development meant applying theory to practice. The theories came from eminent economists, political scientists and social science. Their knowledge distilled the messy experience of countries such as the UK, Germany, the US and Japan into actionable form that could guide the decisions of finance and education ministries in poorer countries. But the theories were rarely grounded in empirical research, and never formally tested.

Today that model has been partly turned on its head. Instead of relying on a linear path from high theory to low practice, development has begun to adopt the methods of everyday innovation, discovering new methods through experiments. Ideas draw on theory, or rather theories. But there is no presumption that just because an idea works on paper it will also work in practice. Instead, in this view, the world learns through trying things out, and the job of theory becomes as much about making sense of practice as guiding it. The best ideas are as likely to come from villages, frontline staff, NGOs and entrepreneurs as from experts. Knowledge arises from engagement with the messy realities of the working world, more than from detached contemplation.

The primacy of practice also has big implications for how we think about 'scaling' and replication. What works in one place, and at one time, may not work so well in another place and at another time in quite the same way, as proved to be the case with village-level microcredit in the 1990s, public-private partnerships in the 2000s or M-Pesa in the 2010s. It's only through practical experiment that we learn what can really spread and where.

Collaborative thinking in systems

The simpler accounts of innovation suggest that it's enough to invent a new method or technology, generate evidence (perhaps through an RCT) and then take it to scale. But for many of the more complex, tangled challenges of development, these approaches are inadequate.

Instead, solving problems in real, messy contexts, with all the complexities of political competition, uneven capabilities and fuzzy rules, tends to require three overlapping types of skill. One is the ability to collaborate, pulling together coalitions across sectoral and organisational boundaries, who may start off being antagonistic. A second is the ability to adapt, adopt and create – knowing when to make use of 'off the shelf' solutions, and when to invent bespoke ones. The third is the ability to handle data and evidence, recognising honestly what is and isn't working, so as to keep a firm focus on results.

It's hard to do all of these things well. Many political and community leaders, experts and consultancies, active in the development field are very good at one (for example, leaders good at convening, design teams good at creativity, or researchers strong on evidence), and occasionally two, but only very rarely all three. Yet looking ahead, the ability to reshape whole systems of healthcare, transport or education, by

combining innovation, collaboration and evidence, may deliver much bigger gains than the adoption of individual technologies or methods.

This is a field where promising new methods are emerging, for example in Nesta's work with the Rapid Results Institute,[125] and the broader field that's covered with labels such as 'collaborative results' and 'collective impact'. All aim to accelerate innovation at the level of whole systems, addressing the importance of relationships as well as activities. This is far from being a science (indeed, as I suggested in a recent paper, some of the most actively promoted methods look like steps backwards rather than forwards).[126] But more effective ways for systems to operate are likely to become as normal a part of the development innovation toolkit as the higher-profile work on social investment or open data.

Development as innovation

A final reason for taking innovation seriously is that innovation is more than just an aid to development. Two centuries of argument about what helps a nation or place become prosperous have not settled either the definition of what counts as success (is it income, wellbeing or equality?) or what explains success (what mix of human capital, capability, institutions and culture is really decisive?).

But innovation has a good claim to offer a partial answer to both of these questions. Although development can mean many things – greater GDP per capita, democracy, or the various measures of the HDI – what really matters in all of these is the capacity of citizens to make and shape their own world. This is the agency, or freedom, that Amartya Sen wrote about decades ago.[127]

A society rich in agency will have strengths at every stage of the innovation spiral described above. It will be well placed to know

itself and its possibilities. The richer that self-knowledge, helped by data, research, open media and an active civil society, the better. It will be full of capacities to generate new ideas – and not just depend on ones that come from leaders or elites. They may be very small ideas, as well as big ones. Many may be imported or adopted from elsewhere (as Jane Jacobs pointed out, the mark of the most prosperous places is that they are brilliant at importing as well as exporting ideas[128]).

This set of overlapping capabilities – which includes the ability to scale ideas, or transform whole systems – is surely what we intuitively mean by development. It's something different from the capital stock of roads and skyscrapers, different from income per capita, different too from measures like life expectancy and literacy, though it will tend to correlate with all of these. Instead it is an ability to create, adopt and adapt.

These capabilities are, at root, about collective intelligence. How well does any community harness the brainpower of its people?[129] Strong, dense institutions help to make people more than the sum of their parts. Firms, markets, universities, free media and political parties all, at their best, help large groups to think, and act. A business environment that welcomes entrepreneurs, startups and scale-ups is likely to be more successful than one dominated by well-connected monopolies. A political system that provides space for citizens to propose, comment, argue and campaign is likely to be more successful than one that is monolithic and closed.

The use of the emerging tools of collective intelligence to help nations navigate their way to development offers great promise. There are many new tools, generally very cheap, that can help a community gain a clearer picture of its current position and

prospects – which can allow thousands, rather than only a handful, to propose and argue about options. This can shift the job of scrutiny from experts to citizens themselves. These methods are still in their infancy, and collective intelligence will mean very different things in fragile societies with fragmented states than in ones rich with institutions and trust. But there is at least some prospect of countries leapfrogging over the often stuck governance systems of the richest countries.

This interpretation of development as innovation is simple, but challenging. Yes, the world of development should be adopting and adapting tools for innovation to reshape its own practice, including new ways of organising finance, evidence, data and citizen inputs. Yes, too, every nation should be building up its own capacity to innovate, supporting the germination and evolution of ideas at every stage, from the very small to the very big. But the ultimate prize is to see development itself in a new way, as a form of individual and collective freedom that's manifest in the ability to create and spread useful new knowledge. To paraphrase Amartya Sen, this is development as innovation: open, democratic, inclusive and free.

Endnotes

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