



Global Solutions Summit 2019
Technology Deployment for the SDGs:
Building a More Effective and Efficient Deployment Ecosystem

Prepared By:
Alfred Watkins (alfred.watkins07@gmail.com)
Chairman, [Global Solutions Summit](#)

Global Solutions Summit 2019 (GSS 2019) will convene at United Nations Headquarters in New York City on May 13, 2019.¹ GSS 2019 is supported by the UN Department of Economic and Social Affairs, the UN Conference on Trade and Development, the UN Commission on Science and Technology for Development, and the UN Office of Partnerships. The theme of this year's Summit is "Technology Deployment for the SDGs: Building a More Effective and Efficient Deployment Ecosystem."

GSS 2019 will precede and complement the [Fourth annual Multi-stakeholder Forum on Science, Technology and Innovation for the Sustainable Development Goals](#) which will convene at the UN on May 14-15, 2019.²

I. Guiding Principles and Background

GSS 2019 will focus on two issues:

1. Inclusive disruptive innovation
2. Building a local ecosystem to facilitate technology deployment

Both are closely inter-related, indispensable pre-requisites for achieving the SDGs and the [UN 2030 Agenda](#).

¹ GSS 2019 is the fourth in a series of events beginning with the [Inaugural Summit](#) at the US State Department in April 2014, a [Second Summit](#) at the Clinton Presidential Library in December 2016, and a [Third Summit](#) at UN Headquarters.

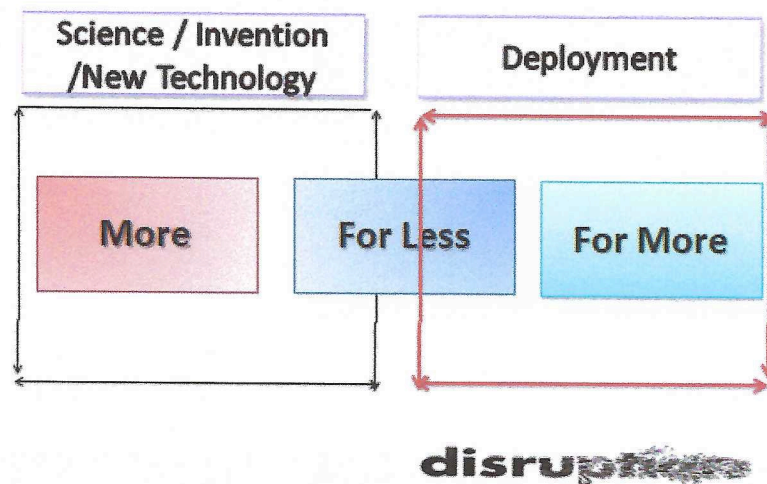
² The STI Forum will offer in-depth, SDG-specific look at the role of STI with respect to SDG 4 (Quality Education), SDG 8 (Decent work and Economic Growth), SDG 10 (Reduced Inequalities), SDG 13 (Climate Action), and SDG 16 (Peace Justice and Strong Institutions). To complement this vertical deep dive, GSS 2019 will provide a cross-cutting analysis of role of deployment ecosystems in implementing all the SDGs, including those that will not be explicitly discussed during this year's STI Forum.

A. Inclusive Disruptive Innovation

GSS 2019 is based on the premise that the challenge of harnessing STI for the SDGs via inclusive, disruptive innovation can be summarized by [Professor Ramesh Mashelkar's](#) phrase **More from Less for More or M-L-M**. In other words:

- **More (performance)** in the form of products whose performance and quality equals or exceeds those of goods and services consumed by the global middle class
- **For Less** in the sense of a 90 or 95% price reduction compared to comparable products currently on the market; so that
- **More (people)**, primarily those at the so-called “bottom of the pyramid,” can benefit from the latest innovations.

Figure 1: STI for the SDGs



Inherent in the M-L-M concept (See Figure 1 above) is the belief that scientific research, engineering, product design, and deployment are upstream and downstream components of the same process – namely, harnessing STI for the SDGs. R&D occurs at the upstream stage where scientists and engineers, focusing on the More From Less process, develop high-performance, low-cost technological solutions. As a result of their upstream research activities, we now have proven, effective, and affordable solutions for many of the most pressing development problems – off-grid, renewable energy, potable water, high quality, affordable health care, solar powered irrigation pumps, off-grid food storage, refrigeration, and processing, etc.

But R&D is only the first step in the long road from the lab to the SDGs. The indispensable next step – Less for More -- is transforming the fruits of these scientific discoveries into radically affordable products

and services and getting them into the hands of the hundreds of millions of people in tens of thousands of urban and rural communities in dozens of countries.

This next step is where inclusive disruption occurs. A technology or a scientific discovery, by itself, is not inherently disruptive. In fact, the phrase “disruptive technology” is a misnomer. There is nothing inherently disruptive about technology unless it is used and deployed on a massive scale, one so large that it renders old products and services obsolete. Disruption, in other words, is a function of deployment, not something inherent in technology. As Clayton Christensen observes, the first step in disruption is creating new markets. “But not just any new markets, new markets that serve people for whom either no products existed or existing products were neither affordable nor accessible for a variety of reasons. These innovations transform complicated and expensive products into ones that are so much more affordable and accessible that many more people are able to buy and use them....In a sense, market-creating innovations democratize previously exclusive products and services.”³

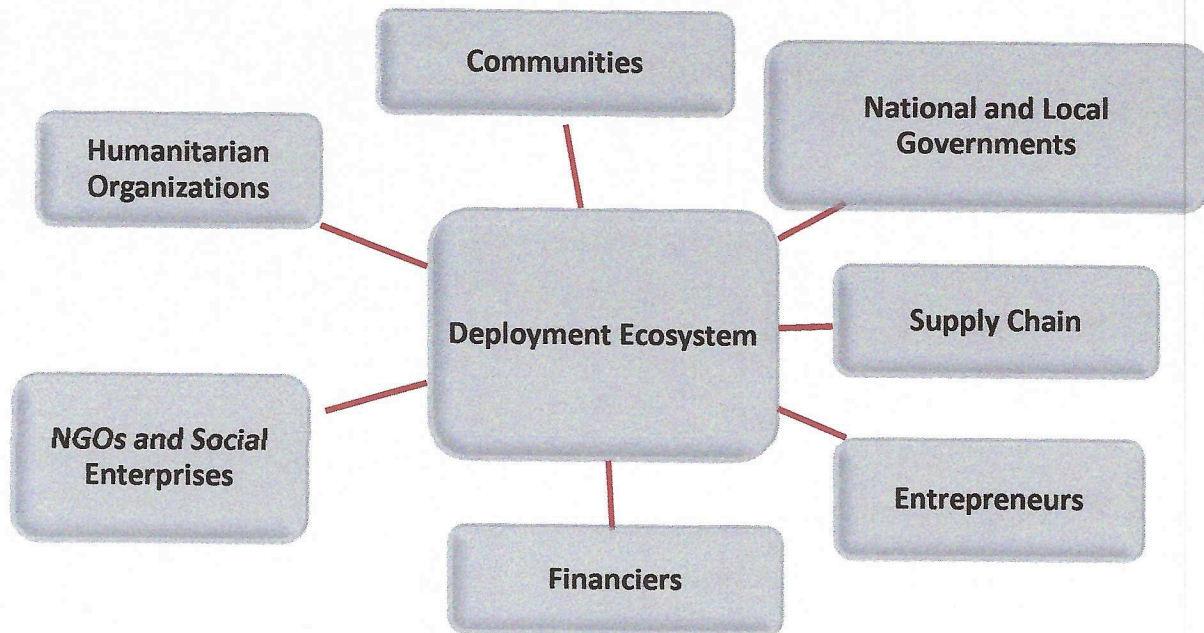
B. The Deployment Ecosystem

Inclusive disruption occurs when entrepreneurs develop innovative business models and harness the surrounding ecosystem to deploy that technology at scale in new, unique and inclusive ways. From the M-L-M perspective, deployment is not a scientific challenge, per se. Scientists, in all probability, will not play a leading role in deployment, although it is the fruits of their labor that will be deployed. Deployment is the domain of business models, supply chains, community organizing, product marketing, and finance. It is, at a minimum, the purview of entrepreneurs, community leaders, equipment vendors, logistics experts, payment mechanisms, finance for social enterprises and consumers, government officials, foundations, NGOs, social enterprises, SMEs, large corporations, and local universities who comprise the deployment ecosystem.

As the speakers at GSS 2018 discussed in great detail, social enterprises and NGOs have developed a wide variety of innovative and effective business models for getting their technology and development solutions into the market. Even within the same sector – e.g., potable water, off-grid electricity, etc. – enterprises employed a wide variety of successful business models. But in the midst of this variety, these enterprises and NGOs had one thing in common – they were not autarkic organizations. They depended on a well-functioning deployment ecosystem (see Figure 2) comprised of local partners, financiers, suppliers, sales personnel and others.

³ Christensen, Clayton M.. The Prosperity Paradox (pp. 26-27). HarperBusiness. Kindle Edition.

Figure 2: Deployment Ecosystem



For example:

- **Communities** may know in broad general terms what they need, but they don't necessarily know where to find it, how to look for it, how to evaluate competing technological solutions and proposals from NGOs and social enterprises, how to organize local supply chains, arrange financing, handle operation and maintenance, organize a village enterprise or coop, and negotiate terms and conditions with potential partners who often are vastly more experienced and sophisticated.
- **Entrepreneurs** need to incorporate technological solutions into a financially viable, scalable enterprise. The tasks include arranging finance, organizing a supply chain, marketing the product in a wide range of communities, collecting payments, operating, maintaining, and repairing the equipment, providing other essential customer services, and generating sufficient revenues to ensure financial viability.
- **Financiers**, including multilateral and bilateral official lenders, institutional investors, foundations, NGOs, private impact investors, the "crowd," the Diaspora, and pension and sovereign wealth funds, among others cannot deploy their capital unless there is a robust pipeline of viable projects and financial conduits for delivering this capital in the correct form and often in very small amounts to thousands of last mile projects.

- **NGOs and social enterprises** have the sectoral expertise and operational know-how along with a general willingness to help in a much larger universe of communities. But they don't necessarily have contacts with all the critical ecosystem partners in every country and community that could benefit from their products and services nor do they have the personnel, financial resources, and inclination to search for potential customers and local partners in thousands of communities across dozens of countries.
- **Humanitarian organizations** may be delivering humanitarian services and have excellent contacts in thousands of communities in dozens of countries, but they do not necessarily have the financial, organizational, and managerial capacity to organize and operate service delivery social enterprises in the potable water, off-grid power, agriculture, health care and ICT sectors, among others. How can they leverage their contacts and trusted community relationships to help social enterprises scale up their operations in communities where these humanitarian organizations are present?
- **Local and national government officials** have to decide how they fit into this new ecosystem in which social enterprises, NGOs, and small-scale distributed technology play a more dominant role in service delivery than may have been the case two or three decades earlier when large infrastructure projects predominated. They need technical information to support their decisions along with the capacity to ensure that whatever decisions are made are then implemented in a "whole of government" effort by lower-level agencies and organizations.
- **Bilateral and multilateral development agencies** need to learn how to operate effectively in this newly emerging ecosystem.

In some locales, critical pieces of this deployment ecosystem are missing entirely. In other locales, many of the constituent elements of a vibrant and effective deployment ecosystem already exist, but they are fragmented and disconnected, resulting in an ecosystem characterized by a series of broken circuits. Where the ecosystem is missing entirely, social enterprises find that they had to create the necessary ecosystem from scratch before they could begin the deployment process. But it is also highly inefficient to have each NGO or social enterprise create its own ecosystem every time it wants to undertake a deployment program. It also substantially increases the cost of deployment, making it difficult if not impossible for many social enterprises scale their operations beyond a few pilot projects.

The net effect of this fractured or non-existent ecosystem is that deployment efforts are less scalable and effective than they would be if potential partners could join forces and establish greater organizational coherence.

II. Agenda: GSS 2019

GSS 2019 will showcase specific policies and programs that multilateral and bilateral development agencies, national and local governments, social enterprises, equipment vendors, local SMEs, foundations, and NGOs can support to create a stronger and more vibrant local deployment ecosystem – one that facilitates the deployment of inclusive disruptive innovations on a scale commensurate with the scope of the SDG challenge.

GSS 2019 will discuss the following issues:

- **Inclusive, Disruptive Innovation** – What do we mean by the phrase “inclusive disruptive innovation?” How is it related to the quest to harness STI for the SDGs? How can NGOs, UN agencies, bilateral and multilateral funding agencies, and incorporate these concepts into their work plans and programs?
- **Technology and the Urban Food Ecosystem:** how can we combine inclusive disruptive agricultural research and development with innovative business models and financing mechanisms for bringing smallholder, subsistence farmers into the formal markets, expand urban farming, and connect all producers with consumers in rapidly growing urban areas.
- **Developing a More Effective and Efficient Ecosystem for Deploying Inclusive Disruptive Innovations:** Deployment is difficult enough on a small scale. But while bringing potable water to an additional 800,000 or eight million people per year million is a wonderful achievement, it is a drop in the bucket compared to the 800 million people who still lack access to clean drinking water. At those rates of deployment, we won’t achieve the potable water SDG for at least 100 years. Seen from this perspective deployment to achieve the SDGs is an exponentially more difficult challenge. It requires nothing less than making the transition from small incremental change to large-scale disruptive change or, in the words of Professor Mashelkar, transitioning from Leap Frogging to Pole Vaulting.⁴ More specifically,
 - How can we transfer lessons of experience, knowledge and know-how from one community or country to dozens of communities and countries?
 - How can we ensure that effective implementation mechanisms are in place to facilitate deployment?
 - If gaps exist in the deployment ecosystem, what are the best ways to fill those gaps and build the requisite capacity?
 - What is the optimal role for national governments, multilateral and bilateral development agencies, the UN, foundations, and other organizations? Should they seek to empower others, control the process themselves, embrace a philosophy of benign neglect, or do something else entirely? If they wish to empower others what else should they do, in addition to improving the regulatory and legal framework?
 - Do multilateral and bilateral aid agencies have the operational, financial, and legal flexibility to support the large scale deployment of small scale distributed development solutions? If not, what additional policies and procedures should they adopt?
 - How do foundations, NGOs and social enterprises fit into this process and what sort of relationships, if any, should they strive to establish with national and local governments, development agencies, and others?

⁴ Mashelkar, R A. From Leapfrogging to Pole-vaulting. Penguin Random House India Private Limited. Kindle Edition.

The aim of the Summit is not to provide definitive answers to each of these questions. Rather, with just over ten years remaining to achieve the 2030 Agenda, the goal is to foment a discussion about the best way to reach these lofty goals.