

Learning from Experimentation

Sustaining Innovation to Achieve Impact

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In Namitete, Malawi, a volunteer community health worker named Verona Kapawani travels to remote villages ravaged by HIV.

She brings medicine, checks on patients, and monitors their adherence to regimens like antiretroviral therapy (ART)—important, because if individuals stop taking ART drugs, the virus quickly become resistant and their chances of survival plummet. Verona plays an essential role as an ART monitor, because for some patients, a trip the hospital means a 100-mile journey, often by foot.

Three years ago, Verona and other ART monitors were hand delivering paper reports from each village to the hospital. But thanks to a free software platform developed by an organization called FrontlineSMS, she sends reports to the hospital's database via text message. Patients who fail to show up to receive ART medication can be easily tracked and counseled on proper steps. In the first 6 months that the hospital began using FrontlineSMS's system, ART monitors saved over 900 hours of travel time and more than doubled the number of patients they were able to reach.

FrontlineSMS is one example of how innovation can help improve the lives of some of the poorest and most vulnerable members of society. But what makes an organization “good at innovating”? In this article, we explore how social sector organizations like FrontlineSMS have built a capacity for continuous innovation through a practice of learning from experimentation.

ORGANIZATIONAL CAPACITY TO INNOVATE

Innovation has been a broadly used term in the social sector, but we refer to innovation here as a new pathway for solving acute problems or fulfilling a mission. It might take the form of a new product, service, or process—or the new application of an existing product, service, or process. In the case of FrontlineSMS, the organization did not invent SMS technology but innovated a new application of this technology that yielded novel pathways for helping health workers like Verona increase their impact.

As mobile phones and SMS become more ubiquitous in the developing world, FrontlineSMS has continued to innovate new software features and improve its functionality, adapting to an ever-changing ecosystem of users and the social problems they are trying to solve. For instance, FrontlineSMS is developing a new feature that will allow hospitals to send patients automatic SMS reminders to take their medicine—a feature that would save health workers even more time and allow them to prioritize visits to patients who are most in need. The ongoing evolution of FrontlineSMS underscores the fact that sustained impact comes from more than a single innovative event. Rather, developing a capacity to innovate continuously can be key to achieving long-term, systemic impact.

Why is this so? Social sector organizations that are able to innovate productively over time—that have built a practice of innovation

as part of their organizational “DNA”—are often better able to tackle new challenges and sustain their impact within the complex, ever-changing landscape of the globe’s most urgent problems. A strong capacity to innovate can also help organizations scale up their impact by yielding new solutions and opportunities for partnership and collaboration.

Organizations often want to know how they can increase their capacity to innovate. An organization’s ability to innovate effectively and continuously depends upon a wide range of organizational and contextual influences. While there is no simple recipe, organizations that have a high capacity to innovate do exhibit some shared success elements and activities (explained in further detail in “6 Factors.”)

LEARNING FROM EXPERIMENTATION

Organizations that have a strong capacity to innovate tend to make a habit of learning from experimentation, a practice that can help organizations gather critical knowledge and adapt to changing contexts and new challenges. Learning from experimentation can be seen as cycle rather than a sequence of events with a beginning and an end. Generally speaking, a cycle of experimentation might involve testing an idea, gathering data, distilling results into key lessons, and then adapting as needed for the next iteration--thus beginning a new cycle of experimentation.

Approaching innovation as an experimentation cycle involves continual

learning and constant course correction based on that learning. It also means risking failure and recognizing that failure always has value. Failure tends to be a taboo subject in the social sector. This can be because of traditional funding relationships where there may be a lack of understanding of the value of failure and a tendency to hide or cover it up rather than openly discussing it and the lessons learned. This aversion to failure may be because there is so much at stake when it comes to tackling issues that deeply affect poor and vulnerable people—it isn’t just time or money lost, but lives. Conversely, in the private sector, particularly the startup arena, learning from experimentation helps capture the value of failure in the form of lessons learned and failure is often seen as a necessary step en route to success.

When a new idea doesn’t work as planned, the process of learning from experimentation includes steps that enable organizations to still gain valuable insights—into their organizational dynamics, the environment they are working in, or the needs of the people they are trying to help. From these lessons, an organization might also forge new relationships or pathways for entirely new innovations.

How an organization experiments and learns will differ depending on its unique context and mission. Just as there are many forms of innovation, there are no “one size fits all” recipes for this approach. What works for one organization, may not work in a different context. For instance, Verona’s success in Malawi was due in part to the relationships she built with patients and hospitals in rural areas. This model may not be useful in other

countries and contexts where the environment differs.

A practice of learning through experimentation can help foster an organizational culture that embraces change and creativity, tolerates risk and failure, and prioritizes learning—aspects that support a high capacity to innovate. And by systematically gathering and interpreting data, an organization that learns through experimentation is better able to assess whether ideas have succeeded or failed to serve its goals for impact.

To illustrate how unique and powerful this practice can be, we'd like to share a glimpse into the strategies of **FrontlineSMS** and **Circle of Blue**, two organizations that learn from experimenting to drive their impact to scale.

FRONTLINESMS

FrontlineSMS develops free, open-source software that enables anyone—including health and social workers, journalists, and citizens—to communicate via SMS from remote and resource-scarce areas without an internet connection. Currently, FrontlineSMS is being used for a spectrum of projects in over 80 countries, such as helping citizens in Nigeria ensure fair and safe voting practices, facilitating disaster communications across multiple organizations in Ecuador, and distributing husbandry advice to shrimp farmers in Indonesia.

In 2009, FrontlineSMS was approached by Josh Nesbit, at the time a human biology student at Stanford, with the idea of creating a project focused specifically

on the health field. The team would be called FrontlineSMS:Medic and would be fully dedicated to partnering with health organizations to “help health workers communicate, coordinate patient care, and provide diagnostics using low-cost, appropriate technology.” The core FrontlineSMS team would continue focusing on developing its general platform and give FrontlineSMS:Medic the freedom to explore new strategies for helping health organizations implement the SMS communication system. Doing so meant decentralizing the decision-making process to some extent and risking the dilution of time and operating capital, but FrontlineSMS founder Ken Banks recognized the benefit of enabling Nesbit to test a clear vision for a valuable application of the tool.

FrontlineSMS:Medic piloted its first project with St. Gabriel's Hospital in Malawi, which served 250,000 people spread across a 100-mile radius. Starting with a single laptop and a cell phone loaded with the FrontlineSMS software, the team worked closely with the hospital, explored how to implement the system, and trained community health workers to use the system.

After six months, the benefits of establishing a dedicated field team to address the unique needs of health organizations became clear. FrontlineSMS:Medic and its field team saved hospital staff 1200 hours of follow-up time and over \$3,000 in motorbike fuel. Over 100 patients started tuberculosis treatment after their symptoms were noticed by community health workers and reported by text message. Through FrontlineSMS:Medic's more efficient communication system, St. Gabriel's home-

based care unit was able to serve 130 patients who would not have otherwise received care. According to FrontlineSMS:Medic, in less than one year, the platform “expanded from 75 to 1,500 end users linked to clinics serving approximately 3.5 million patients. Growing from the first pilot at a single hospital in Malawi, [the team] established programs in 40% of Malawi’s district hospitals and implemented projects in nine other countries, including Honduras, Haiti, Uganda, Mali, Kenya, South Africa, Cameroon, India and Bangladesh.”

As a sector-specific model, FrontlineSMS:Medic developed incrementally and in unexpected ways as Nesbit and his team explored the best ways to apply the system. Although it was an externally proposed and driven innovation, the spin-off taught FrontlineSMS that giving a separate division the ability to focus on engaging partners in a specific industry could engage more users, enable continued innovation, and increase impact. A key takeaway was that sector-specific products could help users across multiple industries understand how mobile technology was relevant to their unique contexts.

“In many ways, it’s about the power of narrative,” said Sean McDonald, CEO of FrontlineSMS. “People understand the benefits of technology through stories about how it changes the things that they know. FrontlineSMS is a powerful, general tool that you can use to accomplish everything from keeping in touch with your kids to monitoring fair election practices. With so many ‘stories,’ we needed to give people a rubric to

understand how the technology related to their specific industry and the impact they were trying to make.”

This insight sparked FrontlineSMS to create sector-specific projects focused on credit, education, radio, and legal services. FrontlineSMS’s modular approach allows the core team to focus on business operations and developing a lean, user-friendly, and adaptable base platform, while the sector-specific products have the ability to engage a niche user base and create sector-specific relationships and partnerships that a general product would not attract.

Each division is experimenting with new features and strategies for applying the software to industry-specific challenges. For instance, FrontlineSMS:Credit has launched a new payment system configured with Kenya’s M-Pesa that allows microfinance organizations to use mobile money to manage short-term credit. FrontlineSMS:Radio, the organization’s most recent division, is testing polling features that support community radio stations in Africa.

Sector-specific products are an on-going experiment at FrontlineSMS, and the team continues to weigh their risks and benefits. If unsuccessful, a separate division could deplete precious operating capital and human resources from the core organization.

“Reputationally, there are risks as well,” said McDonald. “Every new space is a new intellectual challenge, and some things may be harder to deliver on than others. Opening a new branch and offering a whole new range of services is an enormous organizational pivot. But it’s one that we’ve found is really

necessary and has allowed us to grow.”

Thus far, the niche products have successfully created active communities of users who ask questions, report bugs, and request new features through vibrant online forums. This insight into user needs and behaviors directly boosts FrontlineSMS’s software development capabilities. “Having closer relationships with users has been immensely helpful for us to learn about their habits and behaviors, and how to improve the user experience down the line,” said McDonald. “It accelerates our feedback loop substantially.” As a result of understanding the needs of community health workers like Verona, FrontlineSMS: Medic developed a new plugin called PatientView, which allows for patient records to be managed in the field via SMS.

With a suite of sector-specific products as well as a newly revamped base platform, FrontlineSMS’s ever-present challenge is deciding where to experiment next and how to balance the demand for a wide range of sector-specific features with the need to continually improve—but not overcomplicate—a robust, customizable product.

“Looking at the next year, I’m thinking, ‘What do we do first?’, said Laura Hudson, CEO of FrontlineSMS’s nonprofit branch and leader of its software development. “There are lots of options and lots of ideas that we’ve had. But one of the things we have learned is that rather than adding lots of frills that only a small subset of people will find useful, there’s potentially more value in lean, functional products and focusing on a forward drive.”

CIRCLE OF BLUE

Circle of Blue’s mission is to deliver actionable intelligence about the world’s resource crises, with an initial focus on water and its relationship to food, energy, and climate. Its unique, non-advocacy strategy is based on the belief that fact-based journalism stories, “well told, can connect relevancy to action,” and provide citizens, scientists, and leaders with a compelling and reliable foundation to make critical decisions and accelerate real solutions to the water crisis.

Circle of Blue takes public awareness to the next level by catalyzing the collaboration of multi-disciplinary experts, social sector organizations, and international policy makers to take action to solve the world’s water crisis in new ways. Earlier this year, Circle of Blue’s report and 16-day speaking tour, collectively called *Choke Point: China*, convened state leaders and water and energy researchers to discuss never-before-heard findings about a looming threat to China’s skyrocketing GDP: fierce competition between the nation’s energy demands and its dwindling freshwater supply.

Senior Chinese officials deemed the *Choke Point: China* findings “agenda-setting,” and Circle of Blue later presented its report at the U.S. China Economic and Security Review Commission and at the World Economic Forum. From new data brought forth by scores of experts, to the stories of Inner Mongolia shepherds confronting desertification and Nan Lian farm families coping with sharp cuts to their water allotments, *Choke Point: China* brought vivid

attention to the global ramifications of a nation and its people on the front lines of the water crisis.

This ground-breaking convening of experts had modest and somewhat distant beginnings: it started as a single news story that was proposed during a Circle of Blue staff meeting, that was focused on the energy challenges in the U.S. and their impact on water supplies.

“As we continued reporting, we began accumulating a large data set about a nation—our own—challenged by the competition of water and energy,” said J. Carl Ganter, co-founder and director of Circle of Blue. That series of news stories culminated as a full-scale investigation commissioned by the U.S. Department of Energy. “That journey led us to explore another huge narrative: the collision between water and energy in the world’s fastest growing economy—China.”

For Circle of Blue, there is no shortage of water issues that deserve to be brought to light through innovative, impactful coverage. The team’s challenge is to identify which story leads have the most potential for impact in the lives of the poor and vulnerable. A guiding question the team asks is, “What does the world need to know now?” Circle of Blue’s approach involves a cycle of experimentation to test stories on a smaller scale before fully investing in a full deployment of its teams. In the early stages of a project, the team regularly meets to “test leads.” It analyzes data trends and “weak signals” and assesses the potential impact of a story based on the probability to reveal critical, new information and create impact.

“We don’t wait for stories to happen. We try to listen hard to see where they’re going to happen,” said Ganter. “But until you actually cast the net and pull it in, you’re not sure what you’re going to find.” After a story is published, the team meets to determine whether it has revealed new patterns or promising leads for further exploration. In this way, the team accumulates lessons from the previous iteration, and the cycle of experimentation — what Circle of Blue calls its “knowledge feedback loop” — begins again.

In the process of developing *Choke Point: China*, Circle of Blue applied its experience reporting on the water and energy crisis in the U.S. to launch a logistically challenging initial investigation in China. It deployed its teams across the country to visit research centers, industrial plants, and government agencies to gather, test, and share data. Water and energy scientists, excited about the new patterns that Circle of Blue was uncovering, volunteered to share their findings and in the process, revealed more leads.

The team revealed the stories of Chinese citizens, from villagers to urbanites, all confronting water scarcity and the consequences of rapid industrialization. Their stories added critical human context to the compelling data and work of experts that surfaced from the initial investigation. These results confirmed for Circle of Blue that it had cast the net in the right place. The team learned that there was tremendous interest among scientists and state leaders to explore the issues and work together to solve them.

With this stage of the experiment serving as a positive proof point, Circle of Blue embarked on a new iteration of *Choke Point: China*, a 16-day research and speaking tour that enabled scientists and policy makers to convene, analyze the problem, and begin co-creating solutions on local, national, and international levels. Support from Skoll Global Threats Fund and the Asian Development Bank, and Circle of Blue's partnership with the Wilson Center were all pivotal in making the tour a success.

In Beijing, Circle of Blue met with top Ministry of Water Resources scientists and engineers, who were moved by the *Choke Point: China* findings on Nan Liang, a tiny farming village, which now had to make do with water allotments that had been cut by 30 percent. In the same region, which is responsible for growing 20 percent of the nation's grain, big coal producers and coal-fueled industries had paid to modernize the irrigation infrastructure, conserving 100 million cubic feet of water a year (26.4 billion gallons). But that "saved" water was going to fire more boilers and blast furnaces, not to grow wheat and corn.

Circle of Blue spotlighted Nan Liang as an example of the dire contest over water in China's most important food and energy producing region. For the country to achieve its economic and environmental goals, and to improve the lives of its poor and vulnerable growers, the local battles for water between energy producers and farmers need to be resolved.

By framing the issue in this way, Circle of Blue was able to engage Ministry of Water

Resources officials, who called the findings compelling and have revised their national research program to better understand the conflicts over water. Circle of Blue is now collaborating with MEP and Asian Development Bank on a first-of-its-kind study in China to find new ways to assure economic development and raise living standards of the poor and vulnerable, while conserving the environment.

Each idea that Circle of Blue chooses to test—a lead, a series of stories, or a full-scale field program like *Choke Point: China*—has its inherent risks. As social sector organizations are all too familiar with, time and money need to be stretched to create the greatest impact possible. If a lead doesn't produce results as planned or if a story doesn't resonate with stakeholders, valuable resources and other time-sensitive opportunities are potentially put on the line.

Circle of Blue confronts these risks through a culture of optimism. Guided by "independence, trust, urgency, and agility," the organization has a strong sense of mission and chooses to trust the instincts of its experienced team while remaining alert to opportunities for course correction. It also focuses on capturing lessons from failure. Sometimes a story just stays a story and doesn't reveal an issue of global ramifications, as did *Choke Point: China*. "Even if a story doesn't lead to more, the work is always valuable, because it becomes part of your network and data set that you may revisit later on," said Ganter. "Everything we do is cumulative. There are no one-off projects."

In other words, the process of frontline reporting—researching data and interviewing contacts on the ground—inevitably spawns more stories, reveals overlooked patterns, and grows Circle of Blue’s network of sources and stakeholders. Circle of Blue’s network is a core asset to its ability to gather, assess, and contextualize data quickly. It provides a strong illustration of how the impact of news stories is always cumulative and why “dead ends” are never truly failures, but opportunities to uncover new avenues toward success.

Now that Circle of Blue has established key contacts in China and learned about what it takes to convene experts and leaders, the organization has laid the groundwork for a new iteration of its collaboration with the Wilson Center. The organizations are planning an ongoing program, *Global Choke Point*, that will explore the water, food, energy challenges and connections across India, Mongolia, the Mekong region, Mexico, Jordan, and other stressed regions of the world.

While Circle of Blue is committed to reporting the stories of the poor and vulnerable populations most affected by the water crisis, its goals for systemic impact guide each step of its strategy. One story can stir public awareness, spark government and citizen action, prompt researchers to come forward with more findings, or as in the case of *Choke Point: China*, lead the team toward some of the most significant findings at the core of the water, food and energy nexus. Circle of Blue’s ability to analyze massive amounts of water data to frame, in clear and compelling terms, the resource problems facing nations, can prompt decision makers to actions that improve the lives of everyday people,

like the farmers of Nan Liang.

“These challenges are coming so quickly that business, NGOs, policymakers and the public need strong, connected, systemic responses—fast,” said Ganter. “We inform those responses. And we hope to help the world make better choices in the face of adversity—and opportunity.”

ACTIVELY LEARNING FROM EXPERIMENTATION

The above stories of FrontlineSMS and Circle of Blue exemplify how innovation and learning from experimentation can occur on a range of fronts. FrontlineSMS’s experimentation with sector-specific divisions illustrates one way that organizations test new internal organizational structures and processes. Circle of Blue’s testing of story leads shows how learning from experimentation can advance the evolution of an organization. Thus, innovation and learning from experimentation can happen virtually anywhere—from developing new technologies and business models, to creating new internal processes and external partnerships.

For social sector organizations breaking new ground, learning often happens by doing. While innovation can sometimes happen by chance, learning with intention can help organizations make informed decisions, rechart their current course, reframe problems, and reset goals. As both FrontlineSMS and Circle of Blue illustrate, this approach can also uncover new and unexpected opportunities for innovation and achieving impact.

Learning from experimentation can also be a helpful approach for organizations that have many ideas and need help determining which are the most useful. Like Circle of Blue, practitioners might establish a team-based review of new ideas to gather feedback and determine which are most actionable. The next phase might involve a small-scale pilot project to test the most promising ideas and a survey of stakeholders to distill key lessons.

Because learning from experimentation involves continually asking whether an innovation is effectively serving the organization's mission, it can also be a highly useful approach to forging the crucial link between innovation and long-term, systemic impact. With so much industry hype surrounding the concept of innovation, social sector organizations may feel pressure to push new ideas regardless of whether a new idea will positively impact the mission. Organizations that learn from experimentation will be better positioned to determine whether they should stick to an established strategy or adapt based on what they have learned. Both FrontlineSMS and Circle of Blue continue to focus on their long-term missions and core competencies while testing the status quo and taking risks.

As emphasized earlier, there are no “one size fits all” recipes for developing your organization's ability to innovate or to learn from experimentation. But practitioners might begin by focusing first on the organization's long-term vision and then reflecting on what processes of testing and knowledge gathering best fit the organization's operations and goals for impact. Below are some more tips to get started.

GETTING STARTED WITH LEARNING FROM EXPERIMENTATION

- Reflect on how your organization learns best (e.g. data-driven, motivated by stories) and develop a process of experimentation based on that.
- Develop a set of criteria or priorities to help vet new ideas based on your organization's core mission, vision, or competencies.
- Determine how you'll assess progress along the way and how you will gather metrics (both quantitative and qualitative) for assessing the success of experiments.
- Openly discuss failures. Write down a set of questions that can be used to help learn from unsuccessful iterations.
- Acknowledge and learn from successes as well!
- Adapt old processes based on what you've learned.
- Prioritize time for reflection on new opportunities.