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Teaching Case

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Introduction

In October 2012, Allen Wilcox called a VillageReach Leadership Team meeting for a much-needed strategic discussion. The organization was facing a difficult decision. In his characteristic direct style, he laid out the situation clearly to his team: with dwindling funding reserves, they would need to decide which projects to continue, and which ones to close indefinitely. Specifically, they would need to decide whether or not to continue with the organization's flagship programme called the Dedicated Logistics System (DLS).

For the previous 12 years, VillageReach had worked at the "last mile" of public healthcare, bringing innovative solutions to the challenging task of reaching the most underserved communities in the world. Globally, more than one billion people lacked access to healthcare, and approximately 6.3 million children died every year, primarily from preventable diseases. The organization saw itself as a "global health innovator" that developed, tested, and proved the value of new solutions to critical health problems. These solutions were designed to overcome the most critical issues facing healthcare systems: accessibility of care, human resource constraints, availability of information and lack of infrastructure.

The DLS provided a new approach to delivering vaccines for the World Health Organization (WHO)'s Expanded Program on Immunization (EPI), and was a collaborative initiative launched in Mozambique in 2003 with a local non-governmental organization partner, Fundação para o Desenvolvimento da Comunidade (Foundation for Community Development, "FDC") and the Mozambican Ministério da Saúde (Ministry of Health, "MISAU"). VillageReach had painstakingly built up a dedicated supply chain that brought together improvements in human resourcing, transportation, cold chain and logistics management information to reliably improve the uptake and effectiveness of childhood immunizations for one of the poorest and most under-resourced provinces in Mozambique, Cabo Delgado.¹

This innovative approach to the immunization supply chain had undergone a rigorous external evaluation, which had revealed a significant increase in routine vaccine coverage in the province during the period of VillageReach's intervention.² These results earned VillageReach charity evaluator GiveWell's number one charity ranking from 2009 to 2011, which had generated approximately USD 2 million in unrestricted funding.³ With urging from MISAU, and the infusion of unrestricted funding, VillageReach had embarked on an effort to push the DLS toward national scale, and, for the previous three years, the organization had begun to roll out the DLS to three additional provinces in Mozambique.

At the same time, with the support of other donors, VillageReach had embarked on a series of additional innovations, including a mobile health platform (Health Centre by Phone) in Malawi and an open source logistics management information system (OpenLMIS) which was being implemented in Tanzania and Zambia. These innovations were still in the pilot stage, and their effectiveness had not yet been proven. However, both programs showed significant promise and were a good match for VillageReach's organizational expertise in navigating complex health systems and designing workable solutions for under-resourced communities.

Wilcox's urgency in convening the Leadership Team meeting lay primarily with the way forward for the organization. The national scale-up effort in Mozambique was testing the limits of the organization, which had always seen itself as more an innovator than an implementer. The expansion had been successful thus far, but the time and cost associated with the national scale-up had far exceeded their initial expectations. The DLS expansion to four of 10 Mozambican provinces – upon which the organization's reputation had been largely staked – had now drained the nonprofit's precious unrestricted funding. It was clear that to continue on the path toward national scale-up would require different organizational capacities as well as additional funding. But there was no clear funder in sight.

The Leadership Team needed to decide whether to continue the national scale-up of the DLS, or leave the project behind in pursuit of the other innovations that were in pilot phase. The two new projects would bring in much-needed funding and allow them to continue on their path as an innovator in "last mile" health systems. However, walking away from the national rollout of the DLS would leave the programme in jeopardy as there was no clear partner to take on the national scaling of the programme. Ultimately, Wilcox wanted a decision that would allow VillageReach to have the greatest impact for the underserved communities seeking quality healthcare.

1. See Appendix 1: Map of Mozambique.

2. Kane 2008.

3. Unrestricted funding is donations given to a nonprofit organization that the organization is free to use as they see fit. Restricted funding is grants or donations to a nonprofit organization that requires the funds be used in a specific way or for a specific purpose. If restricted funds are used for something other than what was stipulated, the organization could be required to pay the funds back.

After Wilcox posed the question to the team, he gave them a few minutes to consider their positions before asking for a response. He knew that there were very strong opinions around the table. In particular, two of his senior staff, Emily Bancroft, Programme Director, and Leah Hasselback, Mozambique Country Director, were divided on this very issue. Regardless of the outcome, Wilcox knew that they needed to make their decision quickly, as their current reserve of unrestricted funding would only cover them through the end of the year.

The Expanded Programme on Immunization (EPI)

“The historical record shows that the development of vaccines has consistently involved sizable doses of ingenuity, political skill, and irreproachable scientific methods.”⁴

VillageReach’s DLS was an initiative within the WHO’s EPI, one of the largest global efforts in public health that the world had ever undertaken. Since Edward Jenner introduced the smallpox vaccine in 1798, vaccines had changed the face of public health. According to the United Kingdom’s National Health Service, “No other medical intervention has done more to save lives and improve quality of life” than vaccines.⁵ Global immunization began in the late 1960s with a decade-long campaign to roll out the smallpox vaccine, resulting in the eradication of the disease. The eradication of smallpox was a huge success for public health, a disease that had threatened 60% of the global population and killed one out of every four of its victims.⁶ It was estimated that if smallpox were still present today, more than two million people would die from the disease annually.⁷

Building on this initial success, in 1974, the WHO introduced the EPI, a campaign to provide universal immunization for all children by 1990. This programme was boosted by the Declaration of Alma-Ata in 1978, the first international agenda for primary healthcare. The initial programme targeted 6 vaccines: diphtheria, whooping cough, tetanus, measles, poliomyelitis and tuberculosis. By 1984, the programme had introduced a standardized schedule of vaccinations for children, including DPT, BCG, oral polio and measles. Under the auspices of the EPI, each United Nations member state was responsible for creating their own programme for immunization under the guidelines set by the WHO, based on the health infrastructure present in their national health system.

Although EPI was implemented based on a country’s existing health infrastructure, it required new strategies and adaptations. The success of EPI was particularly crucial in countries with largely rural populations, where existing health systems were either weak or nonexistent. The implementation of EPI required numerous components including a cold chain logistics system, vaccine transport and distribution routes, health worker training, community advocacy, and systems for data collection. With the acknowledgement that rural access was one of the primary challenges, public health experts were seeking solutions to strengthening rural health systems.

Funding for Immunization

With the establishment of the WHO and the United Nations Children’s Fund (UNICEF) in the mid-twentieth century, the global community had a platform upon which to deliver global vaccination initiatives, which was critical to the eradication of smallpox. The EPI, however, was more ambitious in that it required governments, funders and civil society to sustain both commitment and cooperation over decades in order to reach its far-reaching goals. EPI vaccination programmes required the development of essential health system infrastructure, as well as ongoing maintenance, human resources and supplies.

By the 1990s, with immunization rates hovering at 80%, the global attention towards vaccine coverage seemed to be waning. Whether due to lack of interest or novelty, donor countries had turned their attention to other, seemingly more pressing, issues. Developing countries struggled to keep their vaccination programmes running, while pharmaceutical companies – who had become the primary manufacturers of vaccines, over government entities – shifted their attention to developing more expensive, commercial vaccines that were primarily available to children in developed markets.

4. Stern & Markel 2005.

5. National Health Service 2016.

6. World Health Organization 2013.

7. National Health Service 2016.

In 1998, faced with the threat of a reversal of the gains from previous decades, then World Bank president James Wolfensohn convened a wide ranging group of actors, including the WHO, UNICEF, ministers of health, international agencies and the heads of pharmaceutical companies, to declare a renewed commitment to universal vaccine coverage from the international community. The proposed way forward was to create a USD 1 billion fund to enable vaccine purchases, as well as technical expertise and further research and development, to ensure a focus on affordability for developing countries.

The Bill & Melinda Gates Foundation (BMGF) stepped in with seed funding of USD 750 million, allowing the formation of the Global Alliance for Vaccines and Immunization (GAVI) in 2000. GAVI was established to improve the health of children in the poorest countries by extending the reach of EPI. Its coalition of bilateral agencies, institutions and donors helped renew the interest and importance of immunization in defeating preventable infectious diseases with implementing countries. By 2012, GAVI had raised nearly USD 7 billion for its mission.

The Final 20

With the renewed commitment of funders and EPI's continued rollout, immunization coverage became a global success story. In 2012, about 80% of children globally received a complete routine of life-saving vaccines by age one.⁸ This represented a significant increase of just 17% coverage just a generation before.⁹ However, these encouraging statistics glossed over the reality of the situation: vaccine coverage in rich countries was significantly higher than coverage in low-income countries, leaving 22.6 million¹⁰ children each year, primarily in poorer countries, without vaccinations. Furthermore, newer and more expensive vaccines were being introduced into national regimens; yet, poorer regions had markedly lower coverage rates of these newer immunizations.

This disparity was largely due to delivery systems rather than availability and affordability of vaccines. While the technology supporting the creation, testing and procurement of vaccines was world-class, the corresponding infrastructure for delivering life-saving vaccines in low-income countries was often woefully inadequate.¹¹ Historically, vaccine programmes operated like a “farmer sowing seeds”, broadcasting large quantities of relatively cheap vaccines across the countryside with the awareness that, based on this simple logistics model, the vaccines would reach most children but not all (typically urban rather than rural children) and would result in a high level of wastage. As interest in universal coverage and higher-cost vaccines had grown on the global agenda, the WHO and immunization programme implementers were looking for more precise ways to deliver vaccines and to ever-more rural areas.

This was no easy task. The transport and storage of vaccines required a “cold chain” logistics system that keeps the vaccine supply at a consistent temperature of 2 to 8 degrees Celsius through transport, storage and usage. In poor countries like Mozambique, sporadic electricity, unreliable communication, bad roads and lack of vehicles created numerous hurdles to keeping vaccines cold. At the same time, high staff turnover and insufficient technical personnel made it nearly impossible to create effective systems that sustained any meaningful impact for the majority of their populations. Poorer countries' health systems simply were not up to the task of implementing the sophisticated logistics systems necessary to reach sparsely distributed, rural populations.

These challenges seemed almost insurmountable. It was clear that EPI needed new solutions to reach the “Final 20”, or the final 20% of the population in need of vaccines. Therefore, organizations such as VillageReach, which served the most rural and under-resourced health systems in the world, were instrumental to the success of EPI.

About VillageReach

VillageReach was founded in 2000 by Cameroonian Blaise Judja-Sato while working as the Director of Business Development at Teledesic, a satellite broadband company co-founded by Craig McCaw and Bill Gates. With an MBA from Wharton, Judja-Sato had previously worked at Andersen Consulting and telecommunications provider AT&T. While working at Teledesic, Judja-Sato also served in a voluntary capacity as President of the United States arm of the Nelson Mandela Foundation. In this capacity, Judja-Sato joined Mandela's wife, Graça Machel, in Mozambique to assist with the relief efforts following the devastating floods of 1999.

8. Centers for Disease Control and Prevention 2013.

9. Wilcox 2013.

10. UNICEF 2015.

11. Chokshi & Kesselheim 2008.

During his visit, Judja-Sato was struck by the inadequacy of the delivery systems to bring life-saving aid to the remote areas of the country. When he returned to the United States, Judja-Sato convened a group of experts, including Michael Free and John Lloyd of the international public health organization PATH, to assist in addressing the delivery problem. After a year of research, Judja-Sato decided to set up a nonprofit organization, VillageReach.

Based on his advisors' expertise, as well as his observations in Mozambique, VillageReach focused its initial efforts on improving access to vaccines for rural communities. Although VillageReach was a nonprofit organization, Judja-Sato was wary of relying solely on donor funding to sustain their efforts. He therefore conceptualized the idea of creating a social business that could fund the delivery of vaccines. This concept was piloted with a social business called VidaGas, which distributed propane gas in rural communities where the electrical grid was not available to power the immunization cold chain. While VidaGas was fairly successful commercially, providing part of the infrastructure needed to support vaccine delivery in northern Mozambique, by 2007 it was clear the business needed any available profits to grow and achieve commercial scale. VidaGas could not reliably subsidize the funds needed to support vaccine distribution and VillageReach's investment capacity was understandably limited. In the absence of revenue from VidaGas, VillageReach had to rely exclusively on other funding sources.¹²

VillageReach's Dedicated Logistics System (DLS)

With the creation of GAVI in 2000, and funding increases for immunization programmes worldwide, countries struggling to achieve immunization coverage rates of 80% or more were given greater attention and support. When VillageReach began operating in 2000, it was an opportune time to propose a project to reach the rural and underserved villages in Mozambique, with low immunization rates and poor delivery systems.

Mozambique's health system consisted of 10 provincial health directorates, 144 district health facilities and 1277 clinics.¹³ The health system served the large majority of its 26.5 million people¹⁴, however per capita spending on health was just USD 32 (compared with the global average of USD 1,026).¹⁵ Mozambique's health budget was subsidized with support from about 26 bilateral and multilateral donors (including World Bank, GAVI and United Kingdom Department for International Development), in the form of grants and loans. Mozambique's health system suffered from a number of shortages of basic resources. The country had one of the lowest rates of health workers in Africa, with just 0.3 health workers per 1,000 people.¹⁶ This low density was further exacerbated by regional differences, with urban areas having far more healthcare workers than rural areas, a predictable but still problematic issue experienced across government sectors. Rurally-posted health workers would leave as soon as they could secure an urban post, thus diminishing not only health resources, but creating a skills drain on rural staff retention.

VillageReach secured initial grants from BMGF and the World Bank. In its first five years, Judja-Sato raised USD 5 million, and recruited some high profile advisors, including former South African president Nelson Mandela, Graça Machel and Dr Seth Berkley of the International AIDS Vaccine Initiative (IAVI). These funds and relationships were critical in conceptualizing an innovative solution for the "last mile" of vaccine delivery.

With this funding, VillageReach, FDC and the MISAU collaborated on a new system for vaccine delivery. The aim was to use existing infrastructure and transport conditions in Mozambique's Cabo Delgado region, but improve the sophistication, reliability and efficiency of the supply chain. At the outset, VillageReach realized that while most programmes seeking to improve immunization coverage focused on incremental changes to existing supply chains, they believed it was essential to reconsider the entire supply chain system as a whole. Drawing on modern, private sector techniques, the VillageReach team redesigned the immunization supply chain to optimize the components based on available resources for performance and cost.

12. The DLS expansion was heavily reliant on VidaGas' liquid petroleum gas (LPG) to reach the last mile. With the injection of capital from another socially minded private sector investor, VidaGas was able to sustain its operations and continue its support of the many healthcare programs while impacting Mozambique far beyond its healthcare obligations. VidaGas operated in multiple provinces, supporting VillageReach projects across the country as well as having a growing enterprise customer base.

13. Ministry of Health of the Government of Mozambique (MISAU) 2011.

14. The World Bank 2016.

15. The World Bank 2014.

16. World Bank 2011.

VillageReach's DLS approach was simple but innovative. Prior to the DLS, vaccines were delivered from the national to provincial to district storehouses, but the final trip – from district to clinic – required clinic staff to take time off from their duties to retrieve vaccines. During these trips, clinic staff would close their clinic and use their own funds to take public transport to pick up the vaccines. If clinic staff were unable to front the transport fees to collect vaccines, clinics would experience a stockout and be unable to provide vaccinations to patients. Furthermore, clinic staff were often not trained in vaccine storage and transport, and vaccine supplies were often compromised by lack of reliable transport or faulty clinical equipment for cold storage.

Problems with logistics created stockouts and the resulting lack of care frustrated patients, particularly in rural areas. Many health clinics within rural areas were situated far apart and most patients had to walk long distances to access healthcare, only to be turned away when vaccines and other medicines were not available. This created a lack of trust and a further breakdown of the system.

VillageReach's Country Director for Mozambique, Leah Hasselback, described the issue with trust:

The biggest issue with inconsistency in vaccine distribution is the loss of relationships with mothers and the distrust in the system. Why would a mother come back to have her child vaccinated if they had walked 20 kilometres to the clinic only to be told they don't have any and must come back another day? She won't come back and her child will not be vaccinated.

The primary change was to introduce a new, full-time field-level role, the "field coordinator", who would be responsible for vaccine delivery, data collection and routine maintenance of cold storage equipment. This coordinator was trained in basic procedures to resolve problems, while also given authority to make decisions based on on-the-ground circumstances. By adding a new cadre of worker into the system, the DLS addressed one of the primary bottlenecks of the system: lack of accountability.

Additionally, the DLS introduced routine data collection through an open source, web-based logistics platform that allowed for data visibility and access. It was also important to monitor temperature control, so that the cold chain was not compromised throughout transport and storage. Data was crucial to the supply chain process, allowing appropriate and timely procurement of vaccines, as well as real-time decision-making and continuous improvement through key performance indicators. Finally, the DLS allowed for better transport options, including third party transport from the private sector to augment the use of government vehicles. Although there were some within the organization who objected to outsourcing a key function such as distribution, where an opportunity to connect with the health workers was potentially lost, this decision ultimately provided more time and capacity for EPI staff to spend on training and implementing other elements of the immunization programme.

While the original multi-tiered system resulted in supply chain responsibility in Cabo Delgado province to be dispersed amongst approximately 130 personnel (all of whom required training and resources), the DLS consolidated these tasks to just three dedicated personnel, thus freeing up time for clinic health workers to focus on patient care.

Over the course of five years, the pilot project in Cabo Delgado witnessed remarkable results. Among communities served by health facilities benefiting from the project, knowledge of, trust in, and use of health services increased. As field coordinators became a more consistent presence within the communities, the knowledge of and trust in the government health services increased. This trust was evidenced by greater participation and lower drop-out rates in vaccination programmes.

With these encouraging results, other provincial health systems in Mozambique were eager to implement the new approach. Many of the provincial health staff talked to each other about what VillageReach was doing and news of the DLS spread. MISAU continued to receive both formal and informal requests for VillageReach to implement its logistics system in new provinces. It seemed an opportune time for VillageReach to set its sights higher in the quest to strengthen health systems at a broader level.

A New Phase

Eight years into developing the DLS, VillageReach could be proud of their accomplishments. During these initial years, VillageReach emerged as a respected player in both Mozambique as well as other sub-Saharan African countries. Having developed unique field experience, they were creative in their development of new delivery systems, collection and use of data, and engaging the private sector to provide infrastructure support for public health services in remote, hard-to-reach communities.¹⁷

In spite of these exciting developments, Judja-Sato realized he was ready to return to the private sector. Judja-Sato knew VillageReach, as an organization, needed to mature beyond its initial pilot project phase. With so much at stake, he needed to find a new leader to take VillageReach to the next level. Through his network, Judja-Sato was introduced to retired Microsoft attorney, Allen Wilcox. He thought Wilcox, who had spent many years at Microsoft expanding its product distribution channels across the globe and was now looking to apply his international business expertise in the social sector, was the right person for the job.

Like Judja-Sato, Wilcox's career had been in the private sector, but he always had a strong interest in the social sector. As he recalls, there was no significant "ah-ha" moment in which he felt a need to help the poor, but as a father of two young girls, he thought every child should have the same opportunity for a healthy life as his daughters did growing up in Seattle.

Wilcox's arrival at VillageReach in 2008 was timely. The independent evaluation of its pilot project in Cabo Delgado province was underway, and the results coming in were dramatic. Cabo Delgado was a province located 1,450 kilometres north of the capital city of Maputo, with a population of 1.5 million people. When VillageReach began its work in the province, less than 70% of children under five years of age had been fully vaccinated against childhood disease, all of the 90 clinics experienced frequent stockouts of critical vaccines and medicines, and poorly trained EPI workers spent up to 50% of their time struggling with logistics and equipment maintenance.

The evaluation revealed that by the end of the project, stockouts had decreased from 80% to less than 1%. As a consequence, the percentage of children Cabo Delgado receiving the full treatment of vaccines had increased from 68% to over 95%, all at a 20% reduction in the cost of operating the vaccine supply chain. These impressive results seemed to prove that under-resourced health systems could, in fact, be improved to reach far greater numbers in their vaccination efforts.

These results also had a far-reaching impact on VillageReach's fundraising prospects, surprisingly from non-institutional donors. In 2009, the respected charity evaluator, GiveWell, named VillageReach its top charity of the year. GiveWell, founded by two former hedge fund managers, ranked charities by cost-effectiveness rather than traditional metrics used by other philanthropy guides. By highlighting global organizations with exceptional cost-effectiveness based on rigorous evaluations, GiveWell mobilized thousands of individuals in the United States to donate to their top-ranked charities each year. By 2011, GiveWell was "moving" over USD 5 million in donations annually. For VillageReach, who earned the top-ranked spot and a Gold rating by GiveWell for 2009 and 2010, this translated into more than USD 2 million in unrestricted funding in just two years.

With this infusion of funds, and the urging of MISAU, the VillageReach team made the ambitious decision to embark on a scale-up of its programme. From 2009-2011, the team tirelessly worked to expand the DLS to three additional provinces. Their existing relationships in the pilot project province had provided the impetus and support for the expansion. Cabo Delgado's EPI government officials had spent much time engaging with their colleagues in surrounding provinces, advocating the successes and results of DLS and ultimately promoting its reach. Therefore, "buy-in" for the DLS in the three provinces chosen for expansion had already been completed. Informal engagement between coworkers across provinces had commenced during its pilot phase and the newly identified provinces EPI officials were familiar with the VillageReach logistics system and focus could be given to training.

As it had done in Cabo Delgado, the DLS produced impressive improvements in the vaccine delivery systems in the three new provinces. In Gaza and Maputo provinces for example, the government ran the DLS with limited support from VillageReach and were now consistently operating with stockouts below 5% and cold chain uptime over 90%. Other provinces, however, such as Niassa, showed some improvement, but made it apparent that much work was still ahead.

17. VillageReach 2014.

The Question of National Scale

By the beginning of 2012, the DLS was considered an indisputable success and the provincial expansion was well underway; MISAU was now interested in expanding the programme to the remaining 6 provinces. However, global and national EPI policies still needed to be changed to allow MISAU to implement the DLS nationally without risking bilateral and multilateral donor support for its EPI programme. In addition, the upfront cost to transition to a new supply chain model nationwide was prohibitive for MISAU's budget. Finally, the provincial health systems required technical support from VillageReach and FDC to incorporate the new approach into their existing supply chains. It was clear that supplementary funding from donors would be necessary to complete the national implementation plan. Unfortunately, VillageReach was quickly realizing that they did not have enough unrestricted funding to continue the national scale-up without commitments from a larger donor. The GiveWell funds – which were a one-time event – were quickly dwindling, and there was no new funding partner in sight for the DLS.

While VillageReach was engaging MISAU on considerations of a national rollout, they were also conducting conversations with potential institutional donors. These conversations revealed a perplexing pattern. Early funders of the programme felt their mission was accomplished once the evaluation had been successful, proving the immunization supply chain could be vastly improved with a new combination of people, processes and infrastructure. These “early stage” funders were not prepared to provide the vast resources required to change global and national EPI policy and scale the innovation to a national level, nor did they have the intention to subsidize the Mozambican government's health system indefinitely. Other funders who were interested in scaling proven solutions – including large, bilateral and multilateral health donors – were interested in multi-country initiatives that would involve vast sums of funding. However, they first wanted to see proof that the DLS could be scaled at a national level and sustainably transitioned to full government ownership before contributing the large sums required to scale it across multiple countries.

In order to obtain a large-scale grant for regional rollout, VillageReach would need to prove the DLS could be scaled nationally with 100% government ownership. This would likely take several more years of working at both the provincial and the national level to train to build the capacity of government health workers and leaders, building on their learnings from the initial four provinces.

The VillageReach Leadership Team had conducted many conversations over the past few months about what it would take to achieve national scale. In an ideal world, they did not want to compromise on their objectives for the DLS: impact, scale and sustainability. The pilot project and the provincial scale-up had proven that with dedicated resources and sustained intervention, the DLS could have significant impact. However, it seemed that there would need to be a compromise on at least one of the three goals if they were to be able to design a distribution system that could ultimately be adopted by the Mozambican government.

As Emily Bancroft, Programme Director, described:

If we wanted sustainability, we needed to ultimately have government adoption, otherwise it would be like an outsourced government contract, which was not our objective. With government adoption, they would need to take on all of the staffing in the future – including the field coordinator role. We finally realized that with government adoption, we were going to have to let go of impact – not completely, of course, but we were going to have to focus more on scale and sustainability. Therefore, we made a conscious decision to focus on sustainability and scale, and let go a bit of impact.

However, by this time the VillageReach teams in Seattle and Mozambique were reaching a level of strain with the project. As Bancroft explained:

A lot of the team in Seattle was very fatigued by the work in Mozambique and a lot of the talent was feeling, “Where are we going?” and “Is there even the possibility that we're going to get there in Mozambique?” There was excitement about moving on to new projects, particularly since the team is very innovation-focused. However, in the field, the Mozambican staff thought that NGOs are there to fill government gaps, to provide services – they have learned not to rely on government. They thought Seattle needed to keep raising money to do this and they were very vocal as they didn't understand why we would be considering other projects at the expense of the DLS.

On the other hand, there were significant opportunities – for both funding and impact – in the other initiatives that VillageReach was pursuing in other African countries. Two of these initiatives in particular had significant potential to bring fresh funding and energy into the organization. These initiatives were Health Centre by Phone and OpenLMIS.

Health Centre by Phone & OpenLMIS

VillageReach's systems-driven approach was widely recognized by other funders who were seeking to roll out innovations within African health systems. As a result, VillageReach gained support on a number of other health systems strengthening projects in other countries with similar resource challenges to Mozambique. Two of these projects were Health Centre by Phone, a mobile health project in Malawi, and OpenLMIS, a multi-country initiative to roll out the open source logistics management information system that grew out of the DLS.

Health Centre by Phone

VillageReach's mHealth initiative in Malawi, known as Chipatala cha pa Foni (Health Centre by Phone, CCPF) was a two-year pilot project with funding from Concern Worldwide. The programme aimed to provide pregnant women and mothers in the most rural regions of Malawi with first-hand, quality healthcare information to which they may not otherwise have access. In a country with one of the highest rates of maternal, child, and infant mortality in the world, knowing where to go for care and when to seek it was integral to reducing maternal and child mortality rates. For the project, VillageReach built a technology platform designed for low-resource communities with a core focus on providing accessible information on reproductive, maternal and child health issues.

The programme's premise was a toll-free hotline and mobile messaging services. The hotline provided callers with health-related advice and referred any who displayed "danger signs" to a local clinic, health centre or hospital for treatment. The messaging system focused on sending health-related information messages, tailored to the clients' week of pregnancy or child's age.

Importantly, CCPF was an "additive" service to the health system, and therefore did not require a substantial amount of change management for health workers and administrators. The project had high visibility, and a number of other partners were interested in the project, including consumer products giant Johnson & Johnson, as well as global telecommunications company Airtel. If the project was successful, they would likely be able to reach a population of over 1 million people, including approximately 500,000 women and children.

OpenLMIS

VillageReach also started OpenLMIS, a global initiative to provide an open source logistics management information system software for health supply chains in low-income countries. VillageReach's partners in this project were high profile and committed health systems funders and implementers, including the US Agency for International Development (USAID), PATH and John Snow Inc. OpenLMIS was potentially transformative for health systems, capturing and providing critical health data at all levels of health systems, ensuring optimal supply of essential medicines and equipment.

Previously, countries had to build custom logistics management information systems or rely on expensive commercial options. Both options were inefficient. OpenLMIS was designed to be highly flexible and adaptable to the unique needs of low-income country health supply chains, allowing countries to share in the investment of the solution, and learn from each other's experiences in customizing the platform.

As a lead partner on the project, VillageReach was becoming an expert in providing OpenLMIS solutions. The project essentially represented a technology upgrade for country ministries of health, and interest in migrating to OpenLMIS was high in many African countries, particularly with the support of USAID. If VillageReach was successful in learning how to customize and implement OpenLMIS, there would likely be numerous opportunities to win contracts to support country rollouts of the open source platform.

Understanding the Challenge

After Wilcox presented the challenging question to the Leadership Team, there was an initial silence. It was clear the question had been bandied about in "watercooler talks", but the team members were understandably reluctant to take a final stand. Finally, Bancroft and Hasselback glanced at each other almost imperceptibly. Both had been long-standing members of the VillageReach team and had significant experience in global health operations in low-income countries. They also had the utmost respect for the other's capabilities. However, on this particular matter, their opinions were markedly different.

Hasselback believed the organization should double-down on its efforts in Mozambique, using its remaining unrestricted funding to take the DLS to national scale. If they could achieve this goal, Hasselback strongly believed they could secure long-term funding for other countries to do the same. On the other hand, Bancroft felt the organization should drop the effort

to scale the DLS and focus on its strengths as an innovator, putting its available resources and considerable organizational capabilities toward the two new projects, bringing them to the important “proof of concept” stage, as they had done with the DLS.

Hasselback stated her position:

Now that we have expanded the DLS into four provinces, we can't stop. Our withdrawal will cause the DLS to fail and result in serious disruption in vaccine availability as the provinces are forced to revert back to the old delivery system. It will seal the fate of the DLS as a failure; no-one will ever try to scale it with such a black mark on its record.

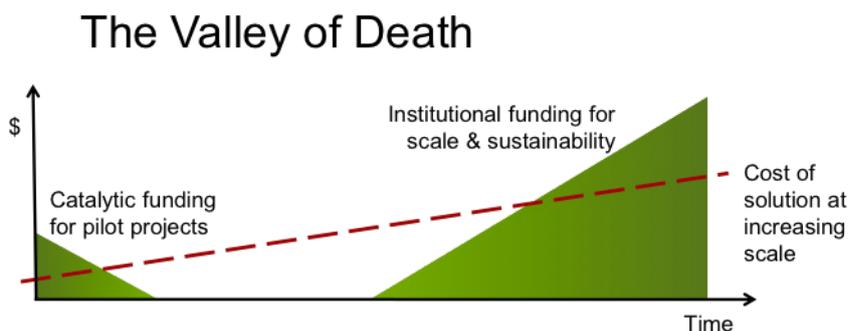
Bancroft countered in what was becoming a heated exchange:

We don't know whether MISAU will ever be in a position to fund and operate the DLS or whether others will show up to help them scale and sustain it. We are risking not only the opportunity to pursue new, promising opportunities, but the entire VillageReach organization!

Wilcox knew that he needed to diffuse the situation if they were going to make a decision. He drew a diagram on the white board and half-jokingly referred to VillageReach's current predicament as being stranded in the “Valley of Death.” On one side of the valley were “catalytic” funders willing to fund pilot projects, while on the far side of the valley were large, institutional donors willing to fund large scale governmental change.

Unfortunately, it seemed that there were no donors willing to fund the work needed to transition from proven innovation at the pilot project scale to government operation of the innovation at the large-scale population level. If VillageReach were to continue to try to scale the DLS, there was a high risk that their innovation would die in the Valley of Death, and maybe even take VillageReach down with it.

Figure 1: VillageReach's Funding Challenge



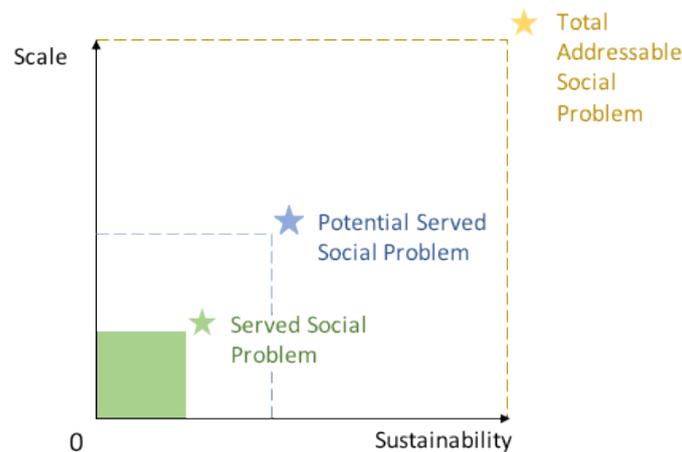
This conundrum also revealed an uneasy question for the organization: What was their essential role in the development of health systems? Was VillageReach best positioned as an “innovation” provider, designing and proving the effectiveness of a solution and then putting it in the public domain for others to take to scale? Or should they become an organization that worked with institutional partners to prove its solutions could be taken to scale and sustained to address global needs?

As the Leadership Team considered the challenge before them, they talked about the ultimate goal of VillageReach: to strengthen healthcare delivery systems at the “last mile” and reach all of the people now and in the future who lack access to quality healthcare. Over the last five years, they had seen VillageReach succeed in delivering quality healthcare to rural and underserved communities. However, the millions whom they had impacted seemed like a mere “drop in the bucket” compared to the total number of people in need of quality healthcare, both now and in the future.

Wilcox liked to think in pictures and he drew another diagram on the whiteboard (Figure 2: VillageReach's “Total Addressable Market”). This diagram borrowed from private sector total addressable market concepts and a class he had attended by Harvard professors Alnoor Ebrahim and V. Kasturi Rangan where they proposed a framework for measuring impact.¹⁸ After drawing the diagram, he explained to the team that the green box represented the benefits provided by the DLS to date, covering only a small percentage of the children needing access to vaccines over a short period of time.

18. Ebrahim & Rangan 2014.

Figure 2: VillageReach's "Total Addressable Market"



He explained: "It's possible that VillageReach could raise additional funds and expand its footprint to provide those benefits to additional children over a longer time period, and therefore fill the blue box. But given the sheer size of the challenge represented by providing vaccine access to all children ad infinitum (filling the gold box), it is simply impossible for VillageReach to address that challenge absent of a coordinated, collective approach by many partners, including large global health institutions and governments."

The Leadership Team realized that embarking into the area beyond the blue box would be a new shift for VillageReach. As Bancroft noted:

The impact on the organization as you shift from pilot projects to shifting systems at scale is great. There is a whole other skillset needed to do this. Do we need new people or do we retrain the people that are already working in the organization?

On the other hand, VillageReach had already proven its capability and success in taking an innovation through the early stages. Health Centre by Phone and OpenLMIS, would bring fresh funding and new life into the organization. Both Health Centre by Phone and OpenLMIS were low cost, impactful innovations aimed at saving lives, with multiple partners and therefore a more diversified funding base. By using the rigour that they had applied to the DLS to these two projects, VillageReach could add a significant set of innovations to their portfolio, which might then be taken up by others for scaling and sustaining.

Bancroft's argument built upon this core competency, and she argued cogently that the organization should hand off the DLS to a more skilled implementer, and move on to the task of creating new innovations:

We know that as a team and as an organization, our specialization is in designing innovations so that systems work better for the most hard-to-reach populations. The health systems where we work are desperate for new innovations in many areas, not just in supply chains. We need to focus on our strengths, taking on new projects that allow us to do what we do best. We are not a large implementing organization – we have never been this type of organization, nor have we wanted to be. We need to leave this for the organizations who specialize in this. We don't have the skills or the capacity to do this, either in Seattle or in Mozambique. We would have to recruit an entirely different type of staff to take this to national scale, and right now, we simply cannot continue to risk our unrestricted funding on this. The quality and impact of the DLS will suffer and we may lose the reputation that we have staked on this project.

On the other hand, the DLS had shown significant promise, and there was a clear case for pushing heavily to find more funding to carry the project through to national scale. Hasselback's argument for continuing with the DLS was compelling:

We've demonstrated that immunization supply chains can be vastly improved with interventions that are designed to make the system work better. We've come a long way in showing that this can be done within multiple provinces. However, what we haven't done is show that these systems can be rolled out on a vast scale within a national health system, fundamentally changing how the system works for everyone. We need to give this model a fair shot, showing that it can be sustainably integrated within government systems. This is innovation too. If we can learn from this process, in the same way that we have learned from designing the DLS itself, then we will be able to replicate this process for other innovations too.

Decision Time

There was no doubt that the two arguments both had merit, and the team was divided on which strategy to pursue. The only problem was, given VillageReach's limited resources and increasingly precarious financial position, they could only choose one course of action.

After many hours of discussion, Wilcox, Bancroft, Hasselback and the rest of the Leadership Team sat in silence, staring at the two diagrams on the whiteboard. They needed to make their decision quickly, as their current reserve of unrestricted funding would only cover them through the end of the year.

Assignment Questions:

- What is systemic about the VillageReach model? What are the challenges and opportunities of working with government to achieve scale?
- Should VillageReach stay focused on innovation, or should it move forward with the national scale-up in Mozambique?
- What is so different about operating in the blue box area versus the additional gold box area?
- Which course of action would you propose for VillageReach? Divide the class into two teams that have to argue the pros and cons of the two options.
- What is the role of the nonprofit sector in providing public services? Should nonprofits act as innovators, service providers, or systems change agents?

Appendices

Appendix 1: Map of Mozambique by Provinces



VILLAGEREACH**Statement of Activities****For the Year Ended September 30, 2012****(With Comparative Totals for 2011)**

	<u>Unrestricted</u>	<u>Temporarily Restricted</u>	<u>2012 Total</u>	<u>2011 Total</u>
Operating Activities				
Public Support and Revenue:				
Public support-				
Contributions and grants	\$ 939,405	\$ 898,550	\$ 1,837,955	\$ 3,010,778
In-kind contributions	250,425		250,425	164,639
Total public support	1,189,830	898,550	2,088,380	3,175,417
Contract revenue	510,994		510,994	504,804
Interest and dividends	3,051		3,051	3,198
Other income				2,683
Net assets released from restrictions	649,838	(649,838)		
Total Public Support and Revenue	2,353,713	248,712	2,602,425	3,686,102
Expenses:				
Program services	2,421,769		2,421,769	1,668,761
Supporting services-				
Management and general	423,282		423,282	364,358
Fundraising	151,809		151,809	100,154
Total supporting services	575,091		575,091	464,512
Total Expenses	2,996,860		2,996,860	2,133,273
Change in Net Assets from Operating Activities	(643,147)	248,712	(394,435)	1,552,829
Nonoperating Activities				
Loss on disposal of fixed assets	(12,140)		(12,140)	
Change in Net Assets from Nonoperating Activities	(12,140)		(12,140)	
Change in Net Assets	(655,287)	248,712	(406,575)	1,552,829
Net assets, beginning of year	2,023,782	521,874	2,545,656	992,827
Net Assets, End of Year	\$ 1,368,495	\$ 770,586	\$ 2,139,081	\$ 2,545,656

Appendix 3: Leadership Team & Board of Directors (2012)

Leadership

Seattle Staff

Allen Wilcox, President
Emily Bancroft, Program Director, Group Lead,
Health Systems Group
John Beale, Strategic Development Director, Group Lead,
Social Business Group
Mike Kinney, Finance and Operations Director
Ron Pankiewicz, Technology Director, Group Lead,
Information Systems Group

Mozambique Staff

Leah Hasselback, Country Director
João Rodrigues, General Manager (VidaGas)

Malawi Staff

Jessica Crawford, Program Manager,
Pharmacy Assistants Program
Zachariah Jezman, Project Manager,
ICT /To Improve Health Services for Mothers
and Children Project
Saiti Chikwapulo, Project Manager
Kwitanda Community Health Project

Board of Directors

President Nelson Mandela, Honorary Board Member, Graça Machel, Chair, FDC, Honorary Board Member

Valerie Nkamgang Bemo, M.D., MPH – Senior Program
Officer, Global Development Initiatives, Bill and Melinda
Gates Foundation
Alexandra Brookshire Esq., Partner, Perkins Coie (retired)
Rick Fant, Vice President, Apps and Marketplace, Mozilla
Corporation
Michael Free, PhD, Vice President of Technology, PATH
(retired)

Karen Glover, Global Integration Partner, K&L
Gates LLP (retired), *VillageReach Board Chair*
Margaret Griffiths, Chief Financial Officer, Qualis Health
Laura Herman, Managing Director, Global Health Practice,
FSG Social Impact Advisors
Will Poole, Social Technologist, Co-chairman, NComputing
Paul Suzman President, OfficeLease
Allen Wilcox, President, VillageReach

Appendix 4: Before and After Photos of Refrigeration Systems



Issue: Cold chains are in advanced state of decay. Old kerosene-powered refrigerators have frequent outages due to lack of fuel and spare parts. As a result, temperature-sensitive vaccines become ineffective.

VillageReach Solution: VillageReach introduced new propane (LPG) powered refrigerators in remote health facilities. These refrigerators are highly efficient and reliable, and have low temperature variability. We also trained health staff in regular operations and maintenance procedures.

References

- Centers for Disease Control and Prevention, 2013. Global Routine Vaccine Coverage - 2012. Morbidity and Mortality Weekly Report, 62(43), pp.858–861.
- Chokshi, D. & Kesselheim, A., 2008. Rethinking Global Access to Vaccines: Removing barriers to the distribution of life-saving vaccines. *BMJ: British Medical Journal*, 336(7647), pp.750–753. Available at: www.jstor.org/stable/20509392.
- Ebrahim, A. & Rangan, V. K., 2014. What impact? A framework for measuring the scale and scope of social performance. *California Management Review*, 56(3), pp.118–141. Available at: [http://www.hbs.edu/faculty/Publication Files/CMR5603_07_Ebrahim_e3316477-8965-4287-be95-04642982b638.pdf](http://www.hbs.edu/faculty/Publication%20Files/CMR5603_07_Ebrahim_e3316477-8965-4287-be95-04642982b638.pdf).
- Kane, M., 2008. Evaluation of the Project to Support PAV (Expanded Program on Immunization) In Northern Mozambique, 2001-2008 : An Independent Review for VillageReach Table of Contents, Available at: <http://www.villagereach.org/wp-content/uploads/2016/03/DLS-Impact-Evaluation-ExecSum-and-Report.pdf>.
- Ministry of Health of the Government of Mozambique (MISAU), 2011. National Immunization Program Comprehensive Multi-Year Plan (cMYP) 2012 - 2016, Available at: <http://www.gavi.org/country/mozambique/documents/cmyps/comprehensive-multi-year-plan-for-2012-2016/>.
- National Health Service, 2016. How Vaccines save lives. Web Page Brief. Available at: <http://www.nhs.uk/Conditions/vaccinations/Pages/vaccination-saves-lives.aspx>.
- Stern, A.M. & Markel, H., 2005. The History of Vaccines and Immunization: Familiar Patterns, New Challenges. *Health Affairs*, 24(3), pp.611–621. Available at: <http://content.healthaffairs.org/content/24/3/611.full.pdf>.
- The World Bank, 2014. Health expenditure per capita (current US\$). Web Page Data. Available at: <http://data.worldbank.org/indicator/SH.XPD.PCAP?locations=MZ>.
- The World Bank, 2016. Mozambique country statistics. Web Page Data. Available at: <http://data.worldbank.org/country/mozambique>.
- UNICEF, 2015. Immunization saves up to 3 million children each year. Web Page Brief. Available at: <http://www.unicef.bg/en/article/Immunization-saves-up-to-3-million-children-each-year/848>.
- VillageReach, 2014. Evaluation of Health System Transport Capacity and Demand, Available at: <http://www.villagereach.org/wp-content/uploads/2009/08/062014-TSS-Assessment-Report-FINAL.pdf>.
- Wilcox, A., 2013. Who are the Final 20 and Why do we Need to Reach Them? Impatient Optimists - Bill & Melinda Gates Foundation, June. Available at: <http://www.impatientoptimists.org/Posts/2013/06/Who-Are-The-Final-20-And-Why-do-we-Need-to-Reach-Them#.V4Zdf2Pwwxc>.
- World Bank, 2011. The Little Data Book on Climate Change 2011, Available at: <https://openknowledge.worldbank.org/bitstream/handle/10986/4386/658380EPI18959034B0Little0Data0Book.pdf>.
- World Health Organization, 2013. The Expanded Programme on Immunization. Web Page Brief. Available at: http://www.who.int/immunization/programmes_systems/supply_chain/benefits_of_immunization/en/.



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