GOVERNANCE

EQUITABLE GROWTH, FINANCE & INSTITUTIONS NOTES

GovTech Case Studies: Solutions that Work

Myanmar: Mobile Phones for Maternal and Child Cash Transfers

Citizen-Centric Public Services that are Universally Accessible

Supported by the GovTech Global Partnership - www.worldbank.org/govtech

GovTech Putting people first

Federal Ministry Republic of Austria Finance

Ministry of Economy and Finance Republic of Korea

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Department of Economic Affairs, Education and Research EAER
State Secretariat for Economic Affairs SECO

WORLD BANK GROUP

Introduction[1]

People throughout Myanmar suffer from difficulties in accessing basic services and infrastructure. This has far-reaching impacts on human development and health conditions, which remain low despite some progress, imposing a drag on productivity. A child born today in Myanmar can expect to be only 47 percent as productive as she could be if she enjoyed full health and education according to the Human Capital Index (HCI).[2] Health and undernutrition among women and children remains a priority problem for Myanmar. The country achieved the Millennium Development Goals targets related to tuberculosis, malaria, and HIV/AIDS, but not those for maternal and childhood health.[3]

This case study demonstrates an intervention in the World Bank-supported Maternal and Child Cash Transfers project, implemented by Myanmar's Department of Social Welfare (DSW).[4] The objective of the project is to improve nutritional outcomes for mothers and children during the first critical 1,000 days of life.[5] Cash transfers were a core element of the project design to promote hygiene, nutrition, and health-seeking practices. The GovTech intervention facilitated the identification and registration of over 290,000 potential beneficiaries during the COVID-19 pandemic. The case study demonstrates that the use of low-tech, low-cost digital solutions can support the digital transformation to increase government efficiency and quality of service delivery, even in fragile and capacity-constrained environments.

1. This case study note has been prepared based on the information and engagement in-country before February 2021.
2. The HCI measures the amount of human capital that a child born today can expect to attain by age 18. It conveys the productivity of the next generation of workers compared to a benchmark of complete education and full health. It is constructed for 157 countries.
3. According to the ASEAN Statistical Report of Millennium Development Goals (2017), Myanmar's childhood mortality rates compare unfavorably with its peers in the Southeast Asia Region: infant mortality is 40 per 1,000 live births in Myanmar compared with the average of 20 in ASEAN, the Association of Southeast Asian Nations. Myanmar's Human Development Index is 0.556, which is well below the average for East Asia and the Pacific (0.720), ranking it 145 out of 188 countries. Myanmar's under-five mortality rate of 50 is almost double the ASEAN average of 26 per 1,000 live births.
4. The program implementation began in 2017, and between 2017 and 2019, it covered 206,600 beneficiaries in five regions and states. The World Bank project was financing the expansion to Shan State and Ayeyarwady Region (in two of the country's poorest and remote areas) in the third quarter of the 2019/20 fiscal year and was expected to cover 230,000 beneficiaries the following year.
5. MCCT project appraisal document, August 2019.

Problems and Objectives

In January 2020, a country-led formative evaluation of the government's cash transfer program revealed several project implementation challenges and highlighted the lack of technology for monitoring as a key gap, which were exacerbated by the COVID-19 pandemic and associated travel restrictions.

A GovTech intervention was introduced to mainstream the use of technology in government processes to improve government efficiency, quality of service delivery, governance, and modernize core government operations.

The ubiquitous mobile phone infrastructure in Myanmar has underpinned the choice of technology. The number of mobile users has risen rapidly from 4.8 percent in 2010 to 82 percent in 2017, with around 72 percent of mobile phones as smartphones. The intervention used an open-source mobile application, Open Data Kit for data collection, and dedicated, Bank-hired information technology short-term consultants. Specifically, the intervention aimed to ensure:

1. **Beneficiary registration** for cash transfers and progress monitoring conducted with the use of an open-source mobile application.

2. The use of a **customized dashboard** to support the data verification, review of beneficiary data, approval/rejection of registrations for payment eligibility, and monitoring of project-specific inputs. The dashboard was designed to be used across the chain of DSW decision-makers at all levels of administration, from the township to the headquarters in the capital.

Solutions and Approaches

Simple, low cost solution. The cost benefits were achieved through two channels. First, the use of open-source software solutions minimized the cost of software development for the mobile application. No resources were spent on the acquisition of software nor off-the-shelve solutions. Second, the high penetration of smartphones in Myanmar removed the need to undertake expensive investments in hardware. Government staff responsible for data submission and beneficiary registration used the intervention's mobile application on their personal smartphones. There was no added cost to beneficiaries nor a requirement for them to use their phones.

Iterative and human-centered design. The combination of the local IT consultants managed by the Bank and the open-source platform provided an agile approach that enabled the team to have a very high degree of responsiveness and iterative design for both the mobile application and the dedicated web dashboard. Iterations were made continuously by incorporating feedback directly from the users. Thus the design process was continuously driven by human-centered input at scale and speed.

DIGITAL SOLUTIONS: TECH RUNDOWN

The digital tools provided an end-to-end solution for mother and child nutrition field data collection, analysis, and registration for the program. It entailed a combination of a mobile application, a centralized web-based application, and a cloud-based solution. The team developed two interfaces with the help of short-term consultants:

- **Mobile application** for in the field beneficiary registration, developed using the Open Data Kit (v. 2.05), an open-source software for collecting, managing, using data.
- **Web-based application,** a custom-built dashboard at the backend to aggregate and display data from the field (collected via the ODK-based mobile application) using a standard framework, PHP/Laravel and MySQL—*see Figure 2 for a screenshot.*

This choice of digital tools facilitated a custom fit-for-purpose development. Leveraging an open-source software meant the team didn't have to build a custom solution from scratch and instead used an as-it-is form offered by ODK and adapted the mobile application to the project's data collection needs. The data and the web dashboard were hosted on cloud servers (public, SaaS) provided by the Amazon Web Services.

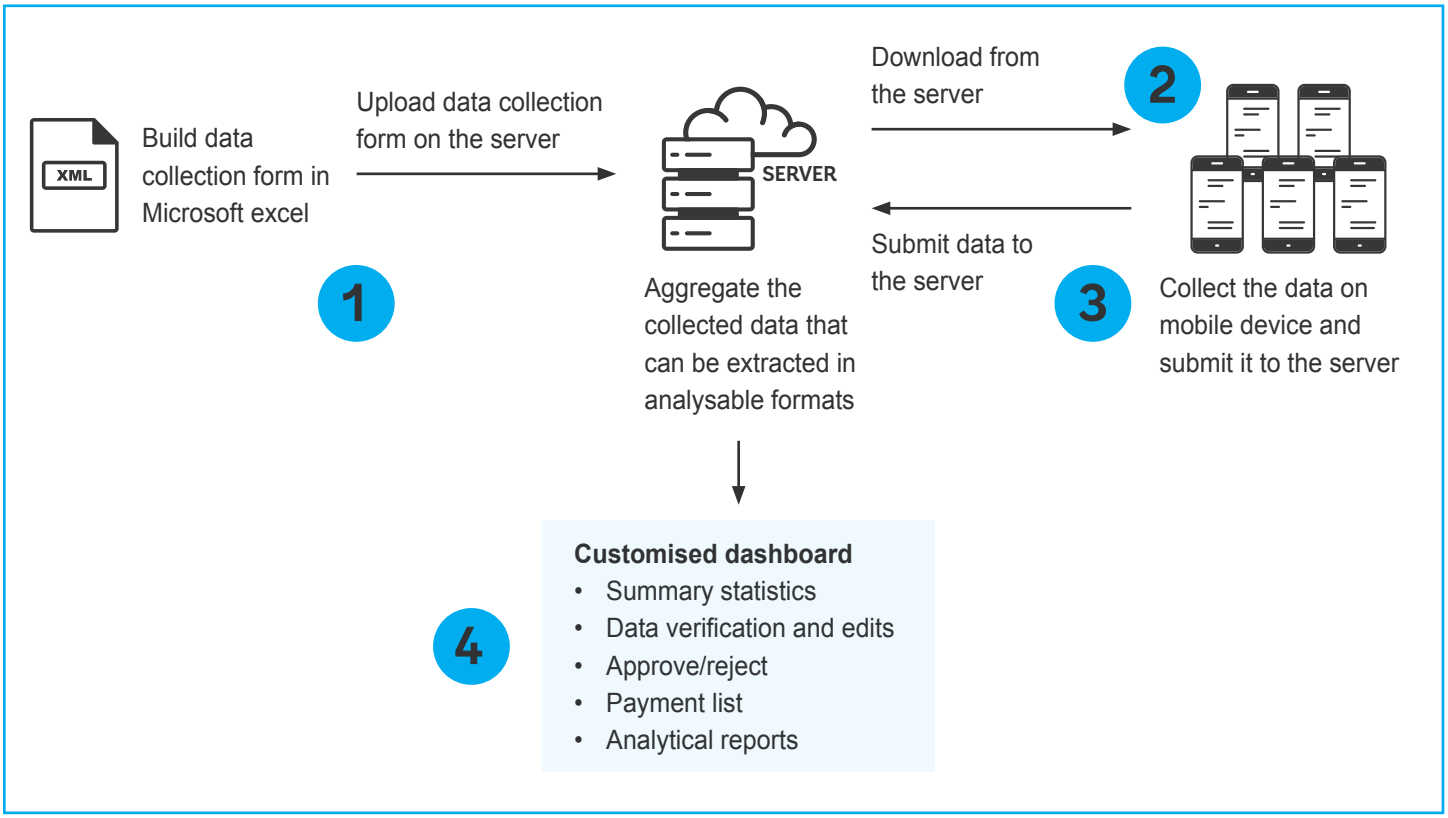
This ultimately provided a digital solution incorporating a data collection mobile application and a decision-making dashboard that transformed the implementation process. These tools helped support the project by bringing efficiencies through streamlining the process of registering beneficiaries, coordinating and sharing information for data verification, and organizing payment lists.

Figure 1 summarizes the intervention workflow for data collection. Submission forms were developed for the ODK mobile application using standard worksheets in Microsoft Excel, which does not require an IT professional or a developer.[6] The forms are then uploaded to the server, which (a) allows smartphones to download form templates to be filled with project-relevant beneficiary information, and (b) upload the filled forms back to the server. Data captured during beneficiary registration included a basic profile of the beneficiary, such as name, date of birth, native language, contact information, pregnancy conception date, and gestational period along with photos and geo-tag. This data is then aggregated on the server and linked to the customized dashboard, which displays relevant summary statistics, facilitates data verification, enables creation of payment lists, approve/reject beneficiary submissions, etc. Data was stored in cloud servers provided by Amazon Web Services, a choice led by considerations around data security, cost, and the Myanmar government's data management capacity.

6. https://xlsform.org/en/.

> > >

FIGURE 1 - Intervention Digital



Transformative opportunities. In addition to improved efficiency, the use of smartphones has also introduced the prospect of collecting new forms of data that would not be possible through the traditional paper-based collection or use of digital spreadsheets. This includes the ability to collect geo-referenced inputs and photos at virtually no extra cost. Integration of such new types of data into the decision-making process opens transformative avenues throughout the implementation. For example, monitoring of payment conditions (like hospital visits) and key project-related outcomes (like children's weight) can now be directly monitored, confirmed, and linked to the beneficiary's profile supported by the new digital workflow. This will bring further efficiencies to the business processes by reducing gaps in relevant information and costs associated with monitoring and evaluation.

Change management. The preparatory stage of the intervention focused on overcoming capacity obstacles, and the implementation process involved a strong emphasis on change management to build client ownership. During preparation, the Bank task team and government counterparts jointly undertook a mapping of stakeholders and shared with them the intervention components of the whole project chain to assist in defining the scope and utility of the intervention. Field visits were conducted where meetings were held with the regional senior officials including the Chief Minister, and officials of key local offices of the General Administration Department, Township Administrations, Village Tract Administrators, and Rural Health Centre staff. These meetings were used to undertake mapping of processes, roles, and responsibilities of each level of administration involved in data collection, management, and reporting processes. With the support of the community volunteers and township DSW staff, a pilot was also undertaken in Shadaw township, a remote area in Kayah State, to test the tools.

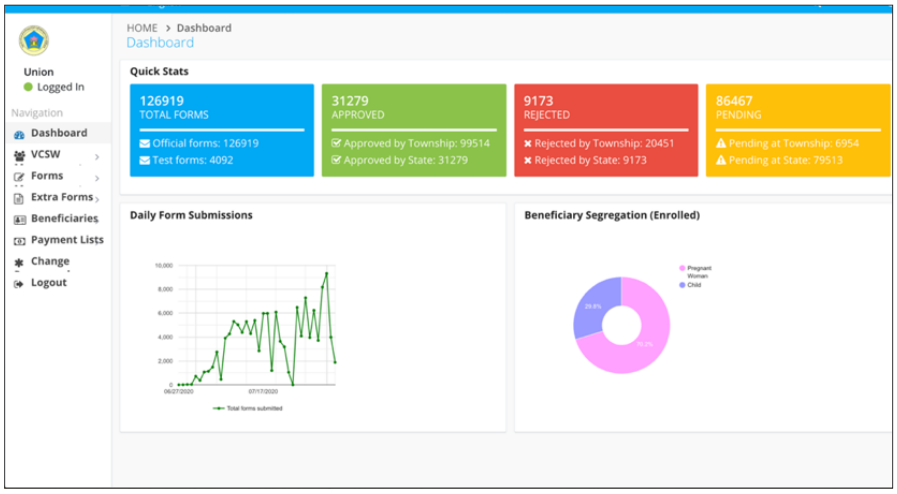
Results

Pregnant mothers and children under the age of two were direct beneficiaries of the intervention. The data collected through the app in beneficiary registration facilitated the successful identification and registration of over 290,000 applications amid the COVID-19 pandemic. Despite delays and physical distancing measures introduced in response to the pandemic, the introduction of simple digital tools helped the project to continue implementation. By early 2021, 250,297 beneficiaries (85 percent) out of 292,641 registered had been enrolled in the project and thus eligible for cash transfers supported by the project. The rejected applicants were primarily due to incomplete applications. Equally important, the intervention has been incorporated into government processes, with actions being prepared to acquire relevant expertise to sustain the program beyond the IT support provided by the Bank's short-term consultants.

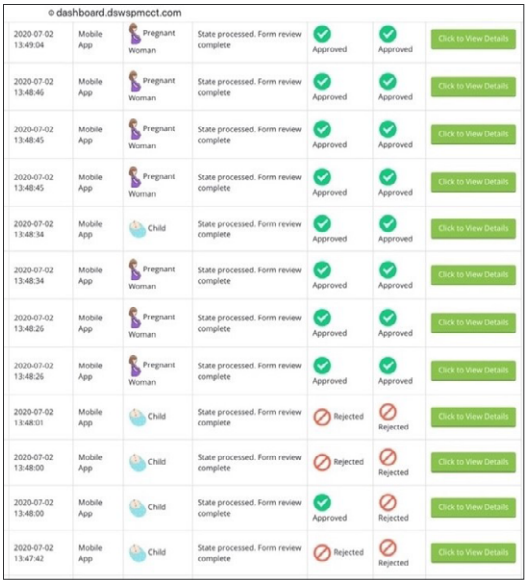
> > >

FIGURE 2 - MCCT Dashboard Screenshot

a. OVERVIEW OF STATISTICS



b. STATUS OF REGISTERS



Consequently, each beneficiary was eligible to receive 15,000 Kyat per month (around $10 at the time of the intervention) with payments disbursed quarterly.[7] This represents a meaningful amount for rural residents, particularly against the backdrop of economic shocks brought on by the COVID-19 pandemic. Given the focus on geographic areas where women are particularly lagging in nutritional status, the economic impact could also have an equity dimension and help to address social exclusion. Coupled with the project's awareness-raising sessions,[8] these integrated components enable pregnant/lactating women to improve their dietary intake and diversity, ensure better feeding practices for young children, and increase the affordability of basic health care during pregnancy and birth, particularly for children in their first two years.

While not confirmed given the current stage of the project's implementation, the existing data profiles of over a quarter-million beneficiaries and the workflow infrastructure allow for transformative monitoring of payment conditions and project outputs. This process is expected to yield significant results by transforming key critical business processes and thus contribute to project-related nutritional and economic outcomes. Such opportunities would not be possible with the use of traditional data collection methods.

Evidence on the early implementation of the MCCT program in Myanmar suggests impressive improvements made in program outcomes at the midterm and serves as a proxy for the potential of continued welfare impacts of delivering cash transfers. These improvements included reported dietary diversity and Infant and Young Child Feeding knowledge.[9] Nearly all women were able to control decisions on the use of cash transfers. The main uses of cash were for food-related purchases and to cover health costs. The proportion of children receiving a minimum acceptable diet increased by over 30 percentage points when the combined package of cash and intensive Social Behavioral Change Communication was provided, increasing from 9.9 percent of children to 41.7 percent.

7. In 2019, monthly per capita income was around $1,407. Rural residents targeted by the intervention are expected to have much lower incomes.
8. These covered a range of topics, such as health, water, sanitation and hygiene, dietary intake, breastfeeding, and complementary feeding.
9. Evaluation conducted by Innovation for Poverty Action in 2017. https://www.theigc.org/wp-content/uploads/2018/06/Save-the-Children-MCCT-Swe-Linn-Maung.pdf.
10. https://resourcecentre.savethechildren.net/library/legacy-maternal-and-child-cash-transfer-mcct-program-learning-brief; https://resourcecentre.savethechildren.net/node/13924/pdf/ipa_midline_report_legacy.pdf.

Lessons Learned

GovTech and Bank portfolio. The case study demonstrates the opportunities of using the Bank portfolio as a platform for testing, learning by doing, and ultimately as leverage to mainstream GovTech interventions. Crucially, it is important to differentiate between the use of digital technology in Bank projects by third-party providers and working with the government in developing and integrating these tools into government processes. Data collection and monitoring platforms used in Myanmar could also be used to expand and incorporate monitoring of Bank institutional priorities and safeguards. This provides a dual opportunity to use Bank projects as platforms for digital adoption by the public sector and, in turn, leveraging this adoption for Bank-specific monitoring.

Low-tech doesn't mean low value. The pilot demonstrates that a combination of low-tech smartphones, open-source tools like ODK, and web dashboards can jumpstart digital workflows and create value for government processes. The market for digital solutions provides more sophisticated and possibly better-integrated tools than those employed during the interventions. However, in public sector agencies with little successful experience of using digital tools, less complex tools can still be of great value.

Strong project-level engagement. The key prerequisite for the intervention to take place and build momentum was a strong commitment from the client to be fully on board with the lengthy design process, experimentation, training, and running of the pilot. The strong support of the Bank project task team and their collaborative engagement with the client has been critical in setting up the building blocks and path for the intervention.

Importance of preparatory work for user-centric design. Joint mapping exercises and process design with the client were essential elements to build ownership and gather critical input. Testing and troubleshooting helped the stability of forms on the mobile application and the dashboard design. Beyond these technical considerations, it was also important to spend time testing the contents of the forms and the dashboard structure, particularly on how they relate to the operational and managerial considerations like managing the data-flow, identifying key decision-making points, relevant responsibilities for new digital workflows, and administrative functions.

Sustainability and IT expertise. The focus on the use of existing digital infrastructure through smartphones has contributed to sustainability considerations. Furthermore, the project's development approach relied on several in-house IT experts for form and dashboard development. It demonstrated several advantages over hiring a firm at the initial setup stage, where numerous iterations through trial and error require flexibility and responsiveness that can be provided by the nimbleness of a dedicated IT specialist or a small team of consultants. However, this poses operational questions around the sustainability of the IT systems. As the IT systems and demands on them grow larger, the risks grow with reliance on a small number of experts.

Individual IT experts and consultants could provide a preferable option for early development, testing, and early rollout stages. However, as the project and the IT system's reach are expanded and operational focus shifts from flexibility in development to consistency and system maintenance, a different arrangement may be preferred. In this case study, the IT consultants provided the kick-start and stop-gap functions in DSW's plans to implement a larger Management Information System supported by a firm. In similar interventions, it is recommended to set out a clear plan of transition from an agile setup of a small number of IT experts and developers to building institutional capacity, resources, and expertise in government to finance, operate, and maintain the new or revised digital workflows.

This case study is based on support provided to the Myanmar Maternal and Child Cash Transfers (MCCT) project by a team comprised of Zubair Bhatti, Ildrim Valley, Umar Nadeem, Saad Omar, and Nandar Soe. The intervention would not have been possible without the leadership and collaboration from the World Bank MCCT project team. The authors thank Francesca Lamanna, Su Su Htay, and Theingie Han for their collaboration, guidance, patience, and suggestions.

This intervention was conducted under the overall guidance of Fily Sissoko, Practice Manager; Mariam Sherman, Country Director (Cambodia, Lao PDR, and Myanmar); and Gevorg Sargsyan, Operations Manager (Cambodia, Lao PDR, and Myanmar).

Contact Information
Zubair Bhatti, Senior Public Sector Specialist, zbhatti@worldbank.org
Ildrim Valley, Public Sector Specialist, ivalley@worldbank.org
Umar Nadeem, umarnadeem@gmail.com
Saad Omer, saad@saadaan.com
Soe Nandar Linn, ladynandar@gmail.com

Supported by the GovTech Global Partnership - www.worldbank.org/govtech

GovTech
Putting people first

Federal Ministry
Republic of Austria
Finance

Ministry of Economy
and Finance
Republic of Korea

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Department of Economic Affairs,
Education and Research EAER
State Secretariat for Economic Affairs SECO

WORLD BANK GROUP