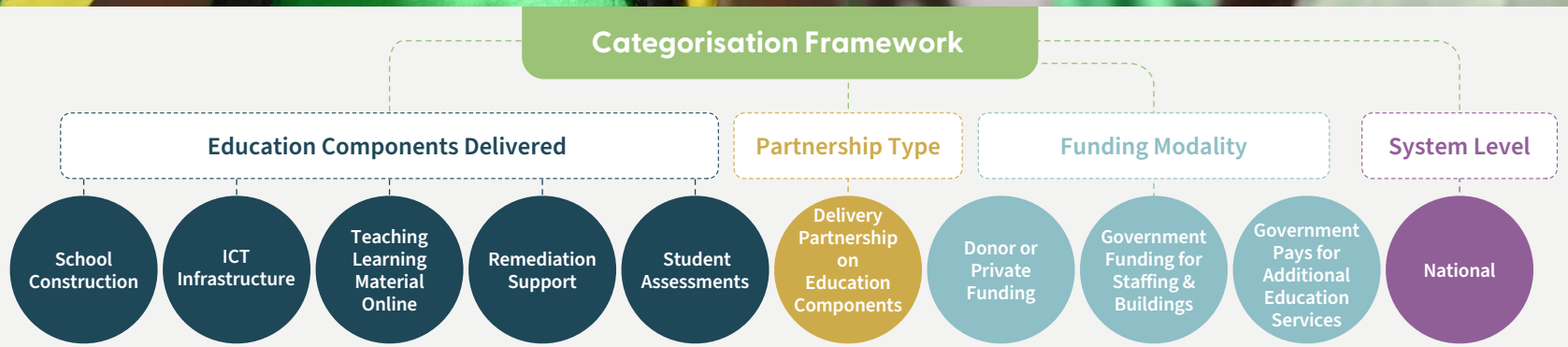
CASE STUDY

Building Education Foundations through Innovation & Technology, Malawi

Photo Credit: onebillion



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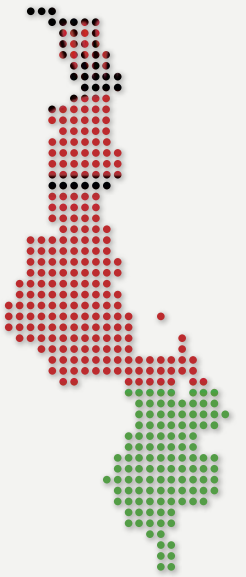
MALAWI

~20.41 million population[1]



6,750
Total number of primary schools

5,860
Number of public primary schools

4,783,093
Public school enrolment

160,540
Private school enrolment

4.9 mn
Number of primary students enrolled[1]

Glossary

BEFIT	Building Education Foundations through Innovation & Technology
DBE	Ministry of Education's Directorate of Basic Education
FLN	Foundational Literacy and Numeracy
ICT	Information and Communication Technology
IMU	Infrastructure Management Unit
ISP	Implementation Support Providers
PMU	Programme and Implementation Management Unit
RCT	Randomised Controlled Trial
SD	Standard Deviation
VSO	Voluntary Services Overseas
TSP	Technical Support Providers

Timeline of the Partnership Development

2013
An 8-week RCT was conducted to evaluate effectiveness of tablet intervention in math and literacy in Malawi by onebillion and VSO together with University of Nottingham

2015-17
Successful results from proof of concept and support were received from the Norwegian government to help scale the programme

2017-18
Imagine Worldwide (Imagine) was founded and came into Malawi to scale the tablet programme to support foundational literacyand numeracy. They conducted several independent RCTs on onebillion's onecourse programme

2018-19
Imagine ran a 2-year RCT in two government primary schools to measure learning impact of the upgraded onecourse

2023
Based on all evidence the Malawi government launches the Building Education Foundations through Innovation & Technology (BEFIT program) for 6000 government primary schools in Malawi

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Background of the Partnership

In 1994, free primary education was introduced in Malawi, East Africa, to increase access and equity. Unfortunately, due to persistent challenges like overcrowded classrooms and resource shortages, only 10% of children achieved reading proficiency by age 10. A similar situation was observed among students studying mathematics, with 19% scoring zero on grade 1 math benchmarks by grade 4. The average class size in Malawi is a significant 111 students.[2] The government of Malawi and supporting stakeholders (Voluntary Services Overseas (VSO), onebillion, Imagine Worldwide) understood the importance of addressing the problems that were inherent in the education system.

The collaboration emphasised the importance of well-designed software aligned with a suitable curriculum for effective learning in developing regions. University of Nottingham was brought on board to assess the intervention in early pilots of the tablet programme, with support from several funders including the Royal Norwegian Embassy, UK's Foreign, Commonwealth & Development Office (FCDO), and UNICEF among others. The assessment strengthened the commitment to be guided by rigorous research in the programme. [3]

Based on learnings from several RCTs conducted over eight years (2013-2021) on onebillion's onecourse tablet-based programme, [4] BEFIT was launched in 2023 to enhance foundational literacy and numeracy (FLN) in grades 1-4, to align with the vision of Malawi 2063, which focuses on FLN and digital skill development

This programme aims to be operationally and financially sustainable by the government of Malawi, reaching 3.8 million children in 6,000 public primary schools annually at scale, and includes upskilling for the community and job creation, solar power and ICT training.

Photo Credit: onebillion

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Overview of the Programme

Implementation Timeline

2013

Efficacy evaluation

In 2013, the first Randomised Controlled Trial (RCT) was conducted for evaluating effectiveness of tablet intervention created by onebillion and supported by VSO to support early mathematical skill development for 318 children in grades 1-3. The 8-week study demonstrated the effectiveness of a math tablet intervention in improving early mathematical skills compared to traditional face-to-face practice.

2017

Set up of Imagine Worldwide

Imagine Worldwide was set up in 2017, with an interest to explore how technology can help FLN. Imagine independently tested the programme using their own inhouse research team and designed additional RCTs.

2018 - 2019

RCTs for various literacy & numeracy applications

Imagine ran an 8-month RCT to test efficacy of literacy and numeracy applications on onecourse. The study was conducted in two low-income community government primary schools. Treatment groups used either literacy or math curriculum for 40 mins per day. Literacy intervention yielded a significant positive effect of 0.34 SD, resulting in 5.3 months of additional literacy learning and tablet math intervention showed a positive effect of 0.29 SD in number identification. [6]

2019 - 2021

RCTs to measure learning impact

Imagine ran another 2-year RCT in two government primary schools to measure learning impact of the upgraded onecourse. The study evaluated an upgraded Chichewa-language onecourse with additional content aligned with Malawi's national education standards. Children advanced through the tablet curriculum at their own pace. Despite the pandemic disrupting the RCT, the programme has a significant effect on early math skills (0.15 SD-0.29 SD) and literacy (0.34 SD). [7]

2013 - 2021

App rollout & consistent learning improvement recorded

The onebillion app provided instruction to students in more than 250 schools in Malawi, reaching a total of 225K students. Through multiple RCT evaluations, the programme consistently showed learning improvements of ~0.4 SD.[2]

2023

Programme launch

The Malawi government launched BEFIT supported by partners Imagine Worldwide, onebillion, and VSO to improve foundational literacy and numeracy skills in grades 1-4. Post-implementation, BEFIT is expected to be fully sustained by the government both operationally and financially.

Photo Credit: Yoneco

Design of the Programme

The programme utilises tablets as tools to address challenges in the education system. The key elements driving its effectiveness include individualised instruction to overcome large class sizes, the use of tablets to mitigate deficits in teaching resources, and a standardised, adaptive pedagogy to address variations in teacher quality. The initiative, integrated into school timetables, employs Chichewa-language software to complement teacher-led instruction. This approach aims to create a learning environment that is motivating and encouraging, catering to the needs of each student and thus, setting it apart from traditional education methods.

1 **The intervention**[5]	In Phase 1, Imagine selected 500 schools and conducted thorough readiness assessments for each. While key developments include the procurement, delivery, and installation of initial equipment (80,000 tablets, accessories, and 500 solar power systems), the edtech intervention resulted in child-directed, adaptive learning on tablets to overcome systemic barriers. These tablets operate without internet or grid power, providing personalised learning for each child. onebillion's software, with an evidence-based curriculum, consistently demonstrates strong learning gains. The model offers an affordable unit cost of less than USD 7 per child per year, with decreasing costs at scale.
2 **Community support**[5]	The programme addresses the lack of ICT training by providing technology training at all educational levels, positioning Malawi for future innovations. It is creating job opportunities and upskilling the workforce. BEFIT is installing solar power systems in all primary schools, aiming to provide renewable energy, extend study hours, and improve education access.

Roles & Responsibilities of Partners

The approach for BEFIT involves working with the government from the beginning, with an estimated 6-year timeline to rollout the programme.
The government serves as the active implementer, managing the programme at national, district, zone, and school levels. Various supporting organisations play distinct roles with a support network managed by Imagine complementing the government's efforts. The success of the model lies in its focus on educational outcomes along with focus on technology and system-strengthening.

Here are all the stakeholders involved in BEFIT.

Ministry of Education's Directorate of Basic Education (DBE)

> DBE leads the programme, utilising existing resources and aligning with the national curriculum. They manage the programme at various levels through a Programme and Implementation Management Unit (PMU), responsible for setting up task forces in directorates. The Malawi government helps its employees with progressive implementation over the first six years and will fully own and operate the programme after 2028.[3]

onebillion - Software Development Partner

> onebillion creates the educational software used in the programme during its inception and has provided a perpetual royalty-free license for its adaptive learning software.[3]

Voluntary Services Overseas - Implementation Partner

> VSO initially implemented the programme under the brand Unlocking Talent before transitioning to a dual role as both a principal partner and implementer.

Imagine Worldwide - Ecosystem Coordinator

> Imagine Worldwide established and funded Imagine Ltd (dedicated Malawian NGO), as ecosystem coordinator for BEFIT.[3] They provide support to the government for effective programme execution. The central level comprises both the PMU and Imagine working in the same office, providing information and guidance to the government.

Implementation Support Providers (ISPs)

Six local non-governmental organisations (NGOs) have been engaged as Implementation Support Providers. These ISPs, in collaboration with government counterparts, are responsible for setting up technology, conducting teacher training, holding review meetings, monitoring progress, and troubleshooting. They lead district-level sub-committees that oversee these activities within their respective districts. ISPs typically remain with schools for two years before transitioning to support other schools.

Technical Support Providers (TSP)

Four local technical companies have been engaged as Technical Support Providers. Three of these companies focus on fabricating metal storage cages, while one is responsible for installing solar systems in schools.

Infrastructure Management Unit (IMU)

The IMU manages government infrastructure, with technology service providers interfacing with the task force for oversight.

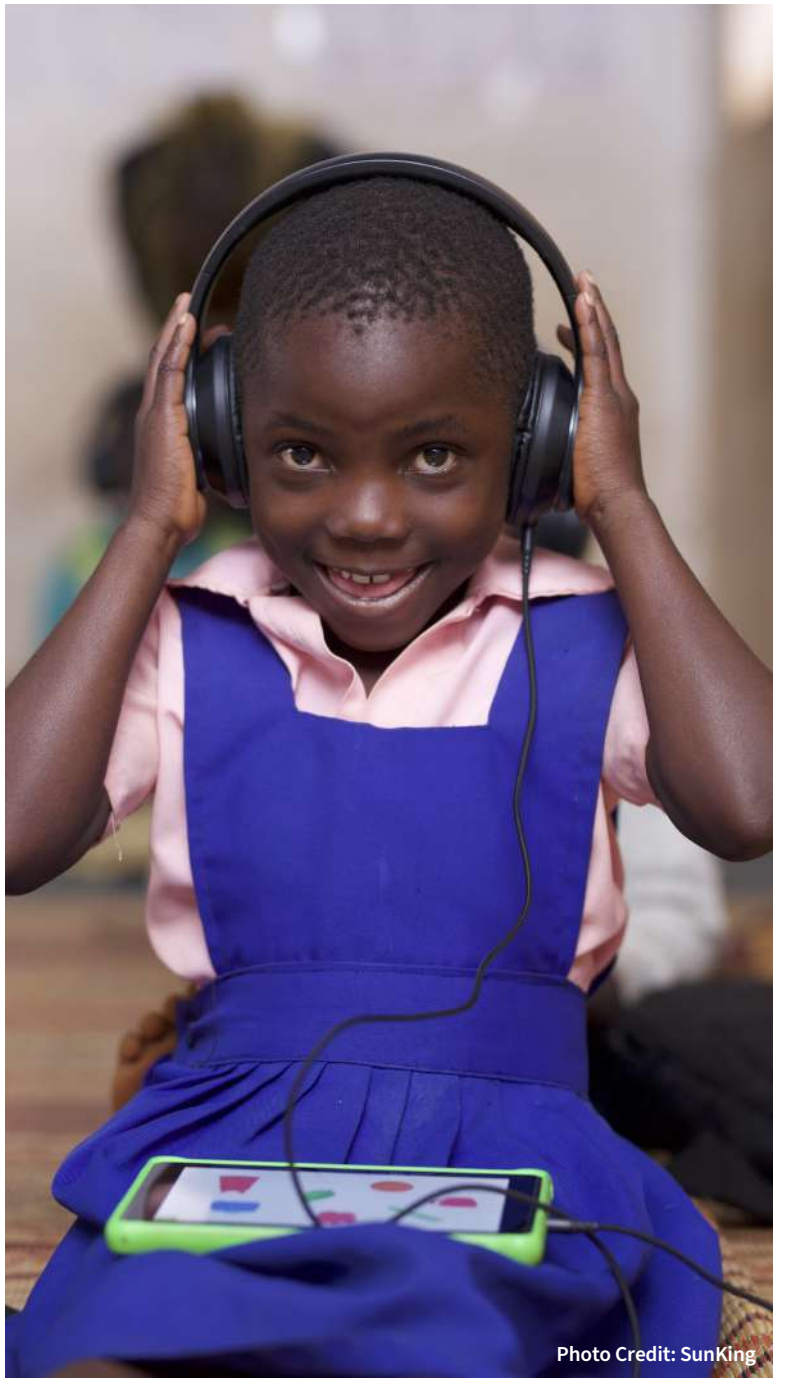

Photo Credit: SunKing

Funding Breakdown

- The BEFIT programme employs an innovative funding structure that mobilises short-term philanthropic funds to build the initial infrastructure, capacity, and evidence necessary to leverage development aid, which bridges to government-sustained scale. Imagine Worldwide secured USD 20 million for Phase 1 of BEFIT, supporting 500 schools and 300,000 students. The JBJ Foundation emerged as a major funder, along with UBS Optimus Foundation with approximately 5-6 other funders participating in Phase 1.
- The implementation model costs less than USD 7 per child per year, with upfront infrastructure and programme rollout funded by philanthropy and aid for the first six years. USD 30.4 million has been raised to fully fund Phase 2 of BEFIT and part of Phase 3, via the Global Partnership for Education multiplier (50% GPE/ World Bank and 50% philanthropy) and the Government of Malawi has formally requested for World Bank funding for Years 3-5. Post this timeline, the government will cover all recurring costs, estimated to be less than USD 5 per child per year.[5]
- Anticipating the need for government funding in the long term, Imagine is working on building capacity within the government to budget for and sustain the programme. This includes encouraging the government to integrate costs of tablet support, maintenance, and other expenses into their annual education budget. The goal is to incrementally allocate funds over the six-year period, ensuring a smooth transition to government-funded operations by the end of the programme's duration.

Key Success Factors of the Partnership

Imagine aimed to explore how technology could address foundational literacy and teacher quality issues in education delivery. Rather than focusing on donor-driven monitoring and evaluation, they sought to incorporate rigorous academic research to identify effective strategies and areas needing improvement. Here are some key success factors they observed.

Aligning all stakeholders from the get-go

Building bridges and connections with all partners, including onebillion, VSO, and Imagine, was key to ensuring effective collaboration. Imagine's collaborative engagement with the government at every stage has not only fostered a seamless partnership but also empowered the government to work with a heightened sense of urgency and efficiency. This approach has led to the successful setup of tablet-based learning in 500 schools, across 18 districts, on time and on budget in Year 1.

Constant government involvement

Engaging the government meant not only involving high-level politicians, but also crucially locating the programme at the technical level of the government. This approach aimed for longevity and continuity, recognising that career civil servants outlive political administrations. Clearly defining a short-term perspective for the programme (seven years) demonstrated a commitment to the government's eventual autonomy. The goal was for the government to take centre stage in programme management, reducing external dependence.

Facilitating transparency & setting clear expectations

Maintaining openness about roles within the collaboration and avoiding territorialism allowed for flexibility. Furthermore, being receptive to changes in leadership roles and responsibilities contributed to the success of the programme. Clear understanding of the programme's goals and potential challenges, such as procurement issues, allowed for the implementation of solutions that maintained efficiency and effectiveness.

Setting up a strategic Project Management Unit

Establishing a PMU served as a strategic move to ensure government control while providing a mechanism for external influence. The PMU, though funded by Imagine, is entirely staffed by government employees, offering a compromise between control and efficiency. Capacity building within teams from day one is a key focus, defining roles and responsibilities to ensure a smooth transition as the government takes over the programme's implementation.

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Impact of the Programme

Imagine shared the results of evidence generated at each stage with the government as well as participating local schools and communities. Government officials were brought in to share the results, which persuaded them to scale after seeing years of positive evidence and improvement in outcomes.

Imagine then started working on understanding what would be needed to scale nationally. When the initial concept note was shared, the government wished to co-design the programme with Imagine and worked together to scale it up. A workshop was conducted where government actors and Imagine came together to provide inputs into the concept note and design the approach together.

Imagine's strategy from the outset was aimed at handing over the running of the programme to the government at the end of the current programme. The local NGO Imagine Ltd will continue for as long as the government needs support and then taper off. With a planned six-year duration, Imagine intends to fully nationalise the programme and hand it over to the government, showcasing a commitment to empowering local entities. The organisation's global perspective is highlighted by their willingness to replicate successful models in other countries, reflecting a goal-oriented and impactful approach over a long-term presence in a single region.

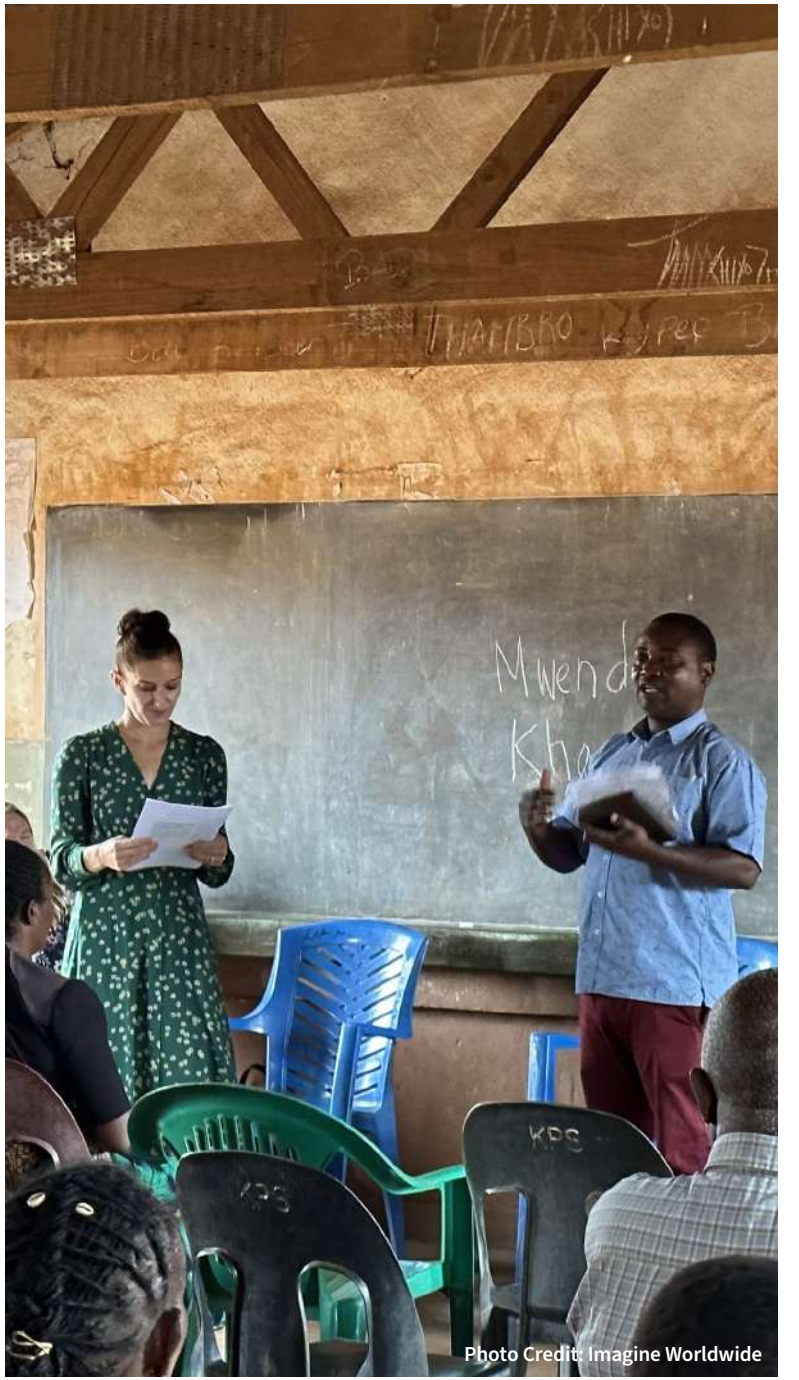

Photo Credit: Imagine Worldwide

Challenges & Mitigation Measures

Challenges to the Programme

- **Balancing power dynamics**
  Challenges arose in navigating power dynamics within the government, especially with technocrats holding differing perspectives. Balancing power and control required strategic navigation to ensure collaboration and alignment.
- **Transitions in leadership**
  The programme faced challenges due to the frequent changes in high-level political leadership, which threatened continuity and stability. The transitory nature of political figures posed a risk to the programme's consistency and long-term success.

Photo Credit: onebillion

Mitigation Measures

- **Sustained, proactive support from government**
  Despite the inherent risks of working with governments, Imagine ensured that potential obstacles, such as bureaucratic processes and a lack of urgency, were mitigated. By providing continuous support at every stage of the programme, Imagine facilitated collaboration and swiftly tackled challenges. For example, procurement challenges, often stemming from bureaucratic delays, were tackled by Imagine, which took charge of the procurement process and imported all necessary equipment for the programme. During the setup phase, the government actively participated to ensure the proper deployment of equipment, aligning their interests with the programme's objectives.

- **Embedding Programme at Technical Level**
  Recognising the transitory nature of high-level politicians, Imagine's strategy involved locating the programme at the technical level of the government. This approach aimed to ensure programme continuity irrespective of changes in political leadership. Remaining open to changes in leadership roles and responsibilities, and being adaptable to the evolving needs of the system, contributed to overcoming challenges and fostering success.

- **Integration into existing policies**
  The Ministry of Education's Directorate of Planning has particularly integrated the programme into existing policy frameworks. Recognising the need for sustained funding post implementation, the focus has been on aligning the programme with the government's decentralisation efforts. This involves establishing district-level implementation teams and working with the local governments to ensure the sustainability and funding of the programme at the district level.

- **PMU for strategic control and efficiency**
  The use of the PMU served as a strategic solution to address challenges related to control and decision-making. While government controls the PMU, external influence ensures operational efficiency and effectiveness, mitigating risks associated with government-run projects.

- **Preempting cost implications**
  The collaborative efforts with the government include the development of a 30-year model outlining the cost implications of running the programme. This forward-looking model considers variations and outlines a budgetary plan for the government to sustainably support the programme beyond the initial implementation phase. The phased integration of costs into the education budget aims to avoid sudden financial load and facilitate a smooth transition to government-led funding.

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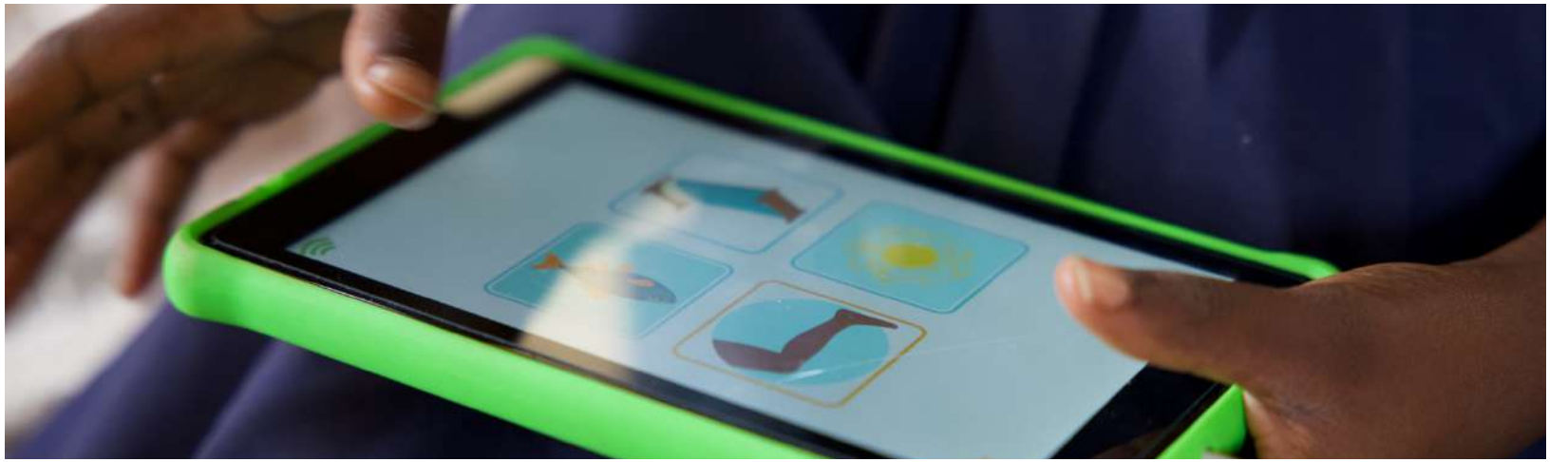
Guidance for Similar Government-Non-state Actor Partnerships

- To ensure long-term sustainability of development interventions it is critical to partner with the government. This calls for a shift from project-based approaches to regular government programme approach, and ensure innovation becomes part of regular programme delivery system and not just a project run by the non-state actor.
- The shift to government ownership of development innovation may pose risks in terms of efficiency and cost-effectiveness. However, with proper planning and capacity building of the existing government delivery infrastructure, it will go a long way in improving overall efficiency and cost-effectiveness. This shift will require dedicated coordination to ensure the government system is well-supported and required capacity is built as the government slowly eases into the management of the innovation.
- Political ownership is important; however, the focus should be on generating programme buy-in at the technical levels of government to ensure the programme has a systemwide ownership and long-term sustainability.



Endnotes

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