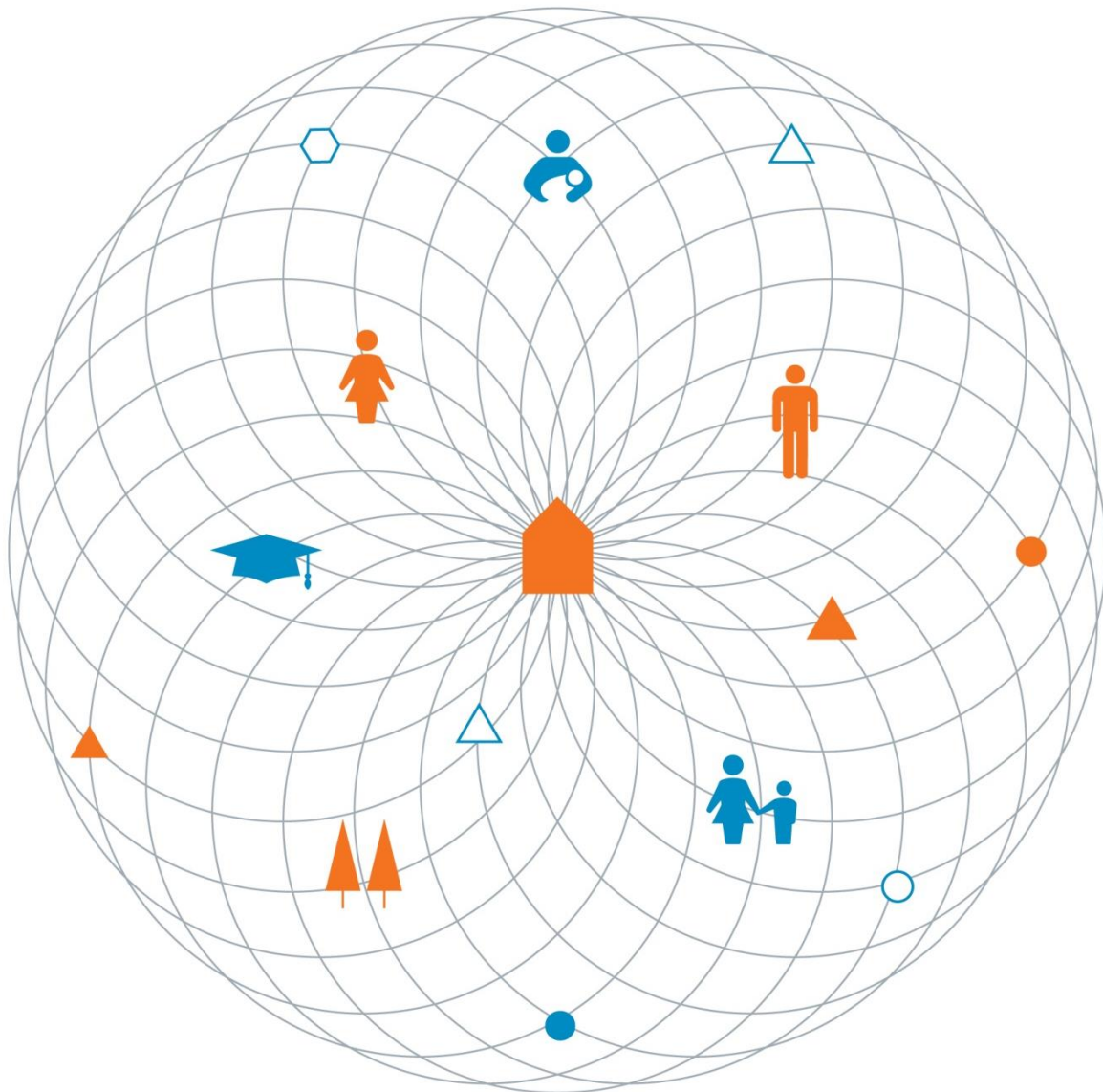


Reaching girls through technology: Lessons learned from SPRING

SPRING Evaluation
BPE Thematic Reports
October 2019





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Department for International Development

SPRING Monitoring and Evaluation

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Heidi Ober, Programme Director

Signature:

A handwritten signature in black ink that reads "Heidi E. Ober". The signature is written in a cursive, flowing style.

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Abbreviations and Acronyms

BPE	Business Performance Evaluation
CRM	Customer Relationship Management
DFID	Department for International Development
DFAT	Department for Foreign Affairs and Trade
GCSA	Girls' Choice Savings account
IE	Impact Evaluation
IP	Implementing Partner
KDHS	Kenyan Demographic and Health survey
KSh	Kenyan Shillings
KPI	Key Performance Indicator
NGO	Non-Government Organisation
NCD	Non-communicable diseases
PPE	Programme Performance Evaluation
PPI	Poverty Probability Index
SEL	Social and Emotional Learning
SMS	Short Message Service
STEM	Science, Technology, Engineering and Maths
ToR	Terms of reference
USAID	United States Agency for International Development
USD	United States Dollar
BPE	Business Performance Evaluation
IE	Impact Evaluation
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Executive Summary: Key findings and recommendations

Broadly, SPRING businesses reached girls using technology through tech-based products or through technological solutions

- This report analyses the experiences of the twelve SPRING businesses which focused on developing technology-based solutions to reach adolescent girls in the five SPRING impact areas of Earn, Learn, Save, Stay Healthy and Stay Safe. It provides an overview of what worked and what did not work to reach girls using technology and provides key lessons and recommendations for programmes seeking to improve girls' wellbeing through tech-based solutions.
- The ways in which SPRING businesses reached girls using technology can broadly be categorised along two lines, depending on how their prototype used technology to reach its girl target group. While some businesses offered tech-based products to girls (and other users), others used technological solutions to enable or improve the delivery of a product or service to girls.
- The first category is composed of those businesses that created technological products for girls to use as part of their SPRING prototype. These businesses created apps, platforms, websites or campaigns to provide services or information to girl users directly. The majority of these businesses focused on urban markets and customers, where there is sufficient infrastructure and penetration of smartphone technology and internet connectivity, as well as sizeable populations of technologically literate customers. These businesses include: Financial Trust Bank, Totohealth, Rooster Logic, Cherehani, MicroHealth Initiative, SafeBoda, Khalti, LearnObots, Maya Apa and Pan Ka Lay.
- The second category is composed of businesses which used technology internally to optimise or enable the delivery of an (under-provided) service or product. In these cases, girl beneficiaries do not use the technology themselves, but benefit from it indirectly. This will be referred to as 'indirect' use of technology to reach girls throughout the remainder of this report. Often, these businesses target marginalised communities — typically rural or low-income populations — that are assumed not to have access to the technology necessary to use digital services directly. Such businesses include: Sehat Kehani, AcceleratED and RIZQ.

Businesses used technology to help increase their user base and tailor their product or service using user data

- Overall, businesses were generally able to increase their user base, including among adolescent girls. One area which businesses found more challenging was around user retention and engagement.
- Engaging with girls through digital and social media platforms was effective, and particularly conducting advertising, outreach and information campaigns to build awareness of businesses and their prototypes.
- Accompanying a digital approach with the physical presence of human representatives helped increase brand recognition and made the technology more accessible to users. Having channels where users could ask questions directly — whether in person or online — was also helpful to increase engagement and use of new information.
- Using HCD to better understand their users helped businesses increase product relevance and uptake. Online applications were able to harvest user data to better inform their intervention and develop a more suitable product to the user.
- External factors which supported technological interventions include having target groups with sufficient access to and familiarity with technology and government policies supporting digitalisation of the economy.

Businesses using technology faced challenges across engagement, access and the reliability of accurate data

- Internally, businesses' efforts were mostly impeded by not knowing enough about their context of operation. This occurred especially where businesses were unable to obtain data on their current users or get accurate figures on total numbers of users.
- Not all businesses were able to produce reliable estimates of girls reached and use them to inform their operations. Digital interaction with customers was relatively anonymous. Although this was at times due to strategic reasons, it limited businesses' ability to understand girl-specific usage of their services and how best to respond to observed trends.
- Several businesses had difficulty keeping users engaged. Some tech-based prototypes were not sufficiently user friendly or mindful of the technological literacy of their customer base to encourage continued use.
- External challenges faced to reaching girls with technology include access to technological equipment, low familiarity with technology, large informal economies, and legal and cultural barriers. All of these barriers are greater in lower-income groups. Other obstacles external to the businesses include low market penetration of affordable technologies to the average consumer, unfamiliarity with using technology, and legal restrictions on operations, mostly relating to sharing content with or working with minors.

Recommendations

- Generally, HCD processes should be revisited and better tailored to business needs and context to ensure more relevant and comprehensive research and prevent common barriers that results from a lack of understanding contextual specificities.
- Although most of the SPRING target countries have high potential for mobile penetration and tech-based solutions, these must be accompanied by in-depth research on specific target groups, contexts and potential barriers. Especially when attempting to achieve behavioural change, or work on 'taboo' subjects and with stigmatised groups, programmes should not assume that girls or young people in general will be open to the type of change that is offered.
- Additional engagement is needed to achieve lasting social norm change and increase demand for innovative products. There needs to be more careful consideration and assessment of the reality of the target groups and of the complexity of social norm change before launching an intervention.
- Careful research on the target group, such as the HCD user journey mapping, should be further encouraged and accompanied by flexibility in the business approach, and tailoring the choice of technology to girls' specific needs and constraints. This may also mean adapting the product in 'real time', based on user behaviour and preferences.
- As adolescent girls are a highly heterogenous group, app-based, smartphone technology may not always be the appropriate solution, particularly to reach more remote, younger, and poorer girls. App-based solutions might best be suited to older, wealthier and more technologically savvy girls.
- Adolescent girls are often hindered in making independent decisions on crucial areas of their lives including health, mobility, education and entry into the labour market. It is challenging to reach them directly without engagement with key decision makers, such as parents and guardians. Behavioural and practical changes in girls' lives may only be realised through changes in their parents and community. Initiatives seeking to engage with younger age groups should think of ways to overcome those barriers to girl reach and include gatekeepers in awareness-raising and engagement activities.
- Technological solutions are often very novel, especially in developing country contexts. Developing trust in the technology through face-to-face engagement and follow-up is crucial. It is important to effectively communicate the benefits of using the technology and provide training and in-person support, particularly among less tech-savvy groups and to foster use in the medium to long term.

1 Reaching girls through technology: Lessons learned from SPRING

1.1 Introduction

SPRING was a 5-year accelerator programme funded by the Department for International Development (DFID), the United States Agency for International Development (USAID), and the Department of Foreign Affairs and Trade (DFAT)¹. It supported business ventures to develop products and services (business prototypes) to impact adolescent girls' lives in the five impact areas of health, learning, saving, earning and staying safe. SPRING was comprised of four separate cohorts of businesses that received mentorship and support over a nine-month period. Cohorts 1 and 3 focused on East Africa (Ethiopia, Kenya, Rwanda, Tanzania, Uganda) and Cohorts 2 and 4 focused on South Asia (Bangladesh, Myanmar, Nepal, Pakistan).

Coffey is the evaluation partner for the SPRING programme, which includes the Business Performance Evaluation (BPE). The BPE provides a means for which to understand 'what works' for SPRING businesses to reach girls, and 'how' and 'why' businesses are able to reach girls as a result of SPRING. As part of the BPE, we conducted case studies with 28 businesses to provide insights on changes in business operations and performance and to learn lessons on emerging pathways to girl impact. We also carried out BPE sustainability interviews with all SPRING businesses to monitor their progress one year after the end of cohort.

1.1.1 Aim of this thematic report

Especially in contexts which are becoming increasingly digitally connected and where access to internet and mobile phones is constantly growing, technology-based interventions may offer valuable opportunities to reach girls. This is particularly important where girls may be affected by mobility or other restrictions impeding their social interaction and autonomy, including their ability to earn, learn, save, stay safe and stay healthy. This report explores the experiences and achievements of SPRING businesses that used technology-based interventions to reach and impact girls. Twelve SPRING businesses developed technology-based approaches to reach adolescent girls. The businesses explored in this report used technology as a primary mechanism to reach girls or offer girl-focused services or products with their prototypes. Businesses using technology as a secondary mechanism were not included in our analysis.¹

After outlining our methodology and limitations, the report presents an overview of each of the businesses and their SPRING prototypes. By providing an overview of what worked and what did not work in technology-based interventions, it provides an assessment of how successful different business strategies were in reaching girls. The report ends by identifying some key lessons and recommendations on reaching girls through technology.

1.1.2 Methodology

This report is based on an analysis of primary data, collected as part of BPE research activities, as well as secondary data, submitted by the businesses and the SPRING implementing partner (IP). The analysis considers all selected businesses whose SPRING prototype used technology to address social issues. This includes businesses which developed technology-based products or services for adolescent girls themselves and those whose prototype utilised technological solutions to reach girls.

BPE research included interviews with business staff members, as well as primary research with adolescent girls, their families, teachers, health providers and others who had insights on how prototypes may be reaching them. Where relevant, our analysis also draws on findings from the Impact Evaluations conducted to date. At the time of writing this report, Impact Evaluation activities had not yet started for Cohort 4 businesses.

¹ Although all businesses utilise technological solutions for their business operations, this report only considers those businesses where technology is the main focus of or driver behind the SPRING prototype, i.e. where technology is used as a primary mechanism to reach girls. It does not consider all other uses of technology.

Across the four cohorts, a total of 24 businesses were evaluated as part of the BPE, and an additional four businesses were selected for additional thematic research. Of these, 12 businesses, outlined in [Table 1](#), were identified across all four cohorts as primarily technology-focused.

Table 1. Sampled businesses and data sources

BPE businesses (including those selected for thematic case studies)	Primary Data	Secondary Data
C1: Finance Trust Bank (FTB); Totohealth	BPE Case study interviews	KPI reports
C2: Rooster Logic; Sehat Kehani	Spot-check interviews	Business Narrative Reports
C3: AcceleratED; Cherehani; MicroHealth Initiative (MHI); SafeBoda	Sustainability interviews	Business Journey Tracking
C4: Khalti; Maya Apa; LearnObots; Rizq	Impact Evaluation reports	SPRING girl impact reports (see Reference)
		SPRING Selection Documents

1.1.1 Limitations

Our analysis focuses only on 12 out of the 28 businesses that were sampled to take part in BPE in-depth case studies, while the SPRING programme worked with 75 businesses. Given the scope of our evaluation, for the BPE component, we purposively selected businesses which would provide lessons learned on ‘what works’ and useful insights on SPRING’s impact on business ability to reach girls. To ensure that there was enough content to study, a **prerequisite for each case study was for the business to have launched a prototype**. The businesses examined in this report are drawn from this sample. As a result, our sample may be ‘positively’ biased towards more successful businesses. It is important to recognise, however, that although our analysis is not representative of the SPRING portfolio as a whole, it still allows for identifying and examining broader trends that could potentially be further explored.

Additionally, case study research took place soon after SPRING participation – typically six months following the end of Cohort activities, which in many cases meant just after prototype launch. This limits our case studies in terms of what they can tell us about signs of girl reach and impact. To mitigate for this issue, we carried out sustainability interviews with all SPRING businesses one year after the end of cohort, as well as Impact Evaluations with two businesses per Cohort. We also triangulated our findings with the analysis of the most recent KPI data and Business Operations Form collected by the SPRING IP. However, it is possible that the business’ situation has changed in a way that is not captured in this report, particularly for Cohort 1 businesses which are no longer required to provide KPI data². This means that we may not always have the most up-to-date information on the status of all businesses that participated in SPRING.

1.2 How did SPRING businesses reach girls through technology?

1.2.1 Ways in which SPRING businesses reached girls through technology

This section provides an overview of the SPRING businesses that used technology to reach girls, before exploring the various ways in which they did so. [Table 2](#) briefly outlines some of the basic characteristics of each business, including the nature of the business, its SPRING prototype, the issue it was trying to address

² This means that Totohealth and FTB were not required to provide a KPI report for 2019. The latest data available for them dates to June 2018 and is reflected in this report.

and its strategy and target groups. [Annex A](#) presents a more comprehensive overview of each of the 12 businesses. [Annex B](#) includes a table relevant KPI data over time for all businesses.

The ways in which businesses reached girls using technology can broadly be categorised along two lines, depending on how their prototype used technology to reach its target populations of girls; namely, offering tech-based products or using technological solutions to enable or improve the delivery of a product or service. Some businesses fit both categories, using a combination of the two approaches.

1.1.1 Using technology for girl use vs. for delivery

The first category includes those businesses that created **technological products for girls to use directly** as part of their SPRING prototype. These businesses created apps, platforms, websites or campaigns to provide services or information to girl users directly. This will be referred to as ‘direct’ use of technology throughout this report. The majority of these businesses focused on urban markets and customers, where there is sufficient infrastructure and penetration of smartphone technology and internet connectivity, as well as sizeable populations of technologically literate customers.

The second category is composed of businesses which used technology internally **to optimise or enable the delivery** of an (under-provided) service or product. In these cases, girl beneficiaries do not use the technology themselves, but benefit from it indirectly. This will be referred to as ‘indirect’ use of technology throughout the report. Often, these businesses target marginalised — typically rural or low-income – communities that are assumed not to have access to the technology necessary to use digital services directly.

Comparing two education businesses, **LearnObots** and **AcceleratED**, can illustrate the distinction between these two models. **LearnObots** and **AcceleratED** both aimed to improve the quality of education in their respective countries of Pakistan and Ethiopia. However, **AcceleratED** worked with teachers, improving their skills, whereas **LearnObots** circumvented teachers and developed a self-contained curriculum through its **RobotWala** product. For **AcceleratED**’s model, teachers were the avenue through which students received improved education, so it focused on optimizing teaching quality through digital technologies and training platforms, thereby using technology for delivery. **LearnObots** aimed to reach students with a technology-based product instead, thereby using technology directly to reach girls, considering it a more effective way to improve educational quality.

Figure 1. Breakdown of businesses using technology directly and indirectly to reach girls

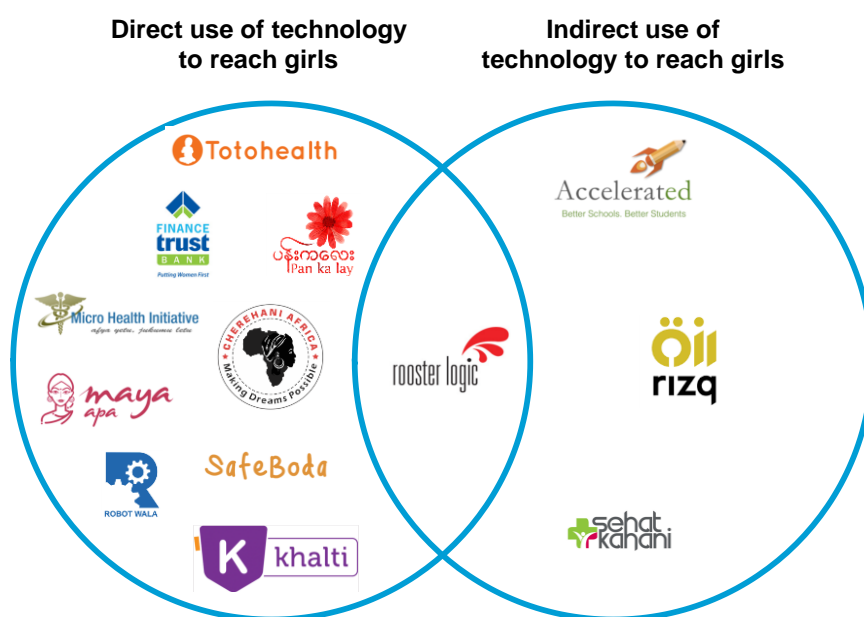


Table 2. Summary of sampled SPRING businesses included in this report

Cohort	Business	Country	SPRING Prototype	Tech Type	Impact Area	Use of technology to reach girls
1	FTB	Uganda	Girl's Choice Savings Account (GCSA) for Ugandan girls aged 10-19, with provision of trainings in financial education and reproductive health. FTB aims to increase girls' financial independence and empower them to have stronger agency regarding their lives and their future.	Mobile application	Save	Direct
	Totohealth	Kenya	SMS and voice services to support Kenyan mothers, pregnant women, and fathers with health advice during pregnancy and up until two years after birth. The company provides health and child development advice and information based on the stage of the specific user's pregnancy or the age of their child.	SMS subscription	Stay healthy	Direct
2	Rooster Logic	Nepal	Provision of real time information, data collection and analytical services across Nepal by hiring girls as enumerators and data collectors through casual and part-time employment, giving girls from diverse communities access to flexible, local and respectable jobs.	Mobile data collection	Earn	Direct
	Sehat Kahani	Pakistan	Affordable and quality healthcare for girls and women in marginalised communities in Pakistan via nurse-assisted video consultations, addressing two market failures: limited access to high-quality healthcare; and low inclusion of female doctors in the workforce. Operates in-clinic and home-based visits, as well as increasing awareness-raising activities to low-income communities through a network of female doctors and community health workers.	Tablet-based health visits	Stay healthy	Indirect
3	AcceleratED	Ethiopia	Online teacher-coaching platform to promote inclusive, active learning in primary school classrooms in Ethiopia and Kenya. AcceleratED coaching services actively sought to distinguish the learning needs of girls and boys and enable teachers to better understand those needs as well as develop appropriate learning styles.	Mobile training for teachers	Learn	Indirect

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	Cherehani	Kenya	Pursues the financial inclusion of female microentrepreneurs in underserved markets across Kenya and offers financial support and loans to young female micro-entrepreneurs.	Mobile application	Earn	Direct
	MicroHealth Initiative	Tanzania	Health insurance card (Dada card) which grants access to discounts and offers to girl-tailored products and services across Tanzania. MHI promotes better service delivery by incentivising providers to invest in equipment, supplies and more user-friendly (including youth and girl-friendly) facilities.	Digital spending card	Stay Healthy	Direct
	SafeBoda	Uganda	Mobile platform enabling safe access to informal transportation in Kampala, Uganda by creating an app-based motorbike taxi system with professional drivers.	Ridesharing application	Stay Safe	Direct
4	Khalti	Nepal	Mobile app through which Nepalese girls and women can manage and pay bills, carry out digital transactions for certain merchants, and receive tailored financial literacy training.	E-wallet and application	Earn	Direct
	LearnObots	Pakistan	E-Learning platform (RobotWala) in combination with a hardware robot “Buddy” that guides and encourages STEM (Science, Technology, Engineering and Mathematics) sessions in schools.	Educational robot and e-learning	Learn	Direct
	Maya Apa	Bangladesh	Bangladeshi anonymous messaging platform providing professional advice on mental, sexual and reproductive health. Allows users to submit anonymous questions on health, wellness, and other topics, which are routed to vetted experts who respond through the platform, engaging in personalised back-and-forth consultations	Mobile application	Stay healthy	Direct
	Pan Ka Lay	Myanmar	Production of online media campaign, <i>So What!?</i> , to educate on, raise awareness about, and de-stigmatise menstruation in Myanmar. Pan Ka Lay engaged with Myanmar influencers and prominent mothers and men, to spread the message of menstruation being a normal biological process.	Social media campaign	Stay healthy	Direct
	RIZQ	Pakistan	Foodbanks in Pakistan that serve multiple functions, including food distribution points, event spaces where community lectures or classes are held, and registration points for beneficiaries. RiZQ created a comprehensive website with donor interface to enable scale up and increase beneficiary reach.	Website and mobile application	Stay healthy	Indirect

1.1.2 Overview of performance SPRING businesses using technology to reach girls

This section presents an overview of performance for a handful of businesses, based on an analysis of their self-reported KPI data, to illustrate the variability in performance across SPRING businesses using technology to reach girls. A full overview of the relevant KPI data can be found in [Annex B](#). Our analysis specifically looks at girl user growth rates and offers a basis for further analysis of what worked and did not work to reach girls, which is expanded upon in [Sections 2](#). Girl user rates can be made up of different types of girl users, depending on the businesses' SPRING prototype; recipients, subscribers, or customers.

Generally, the KPI data shows that technology is not a one-size-fits-all approach, with businesses achieving variable growth rates among their target populations. Totohealth achieved high growth in total SMS-subscribers during its first years. Girl-focused KPIs for SafeBoda and Maya also show rapid growth, while MHI and Cherehani achieved moderate growth. Two other businesses experienced slowing growth while a third achieved very low growth.

Totohealth enrolled 1434 new girl customers, aged 10-19, in its health SMS programme in its first year of reporting (July 2015 – June 2016). This is over 12 times more customers than its baseline figure of 325. Very few Totohealth users reported issues of technological literacy and ability when using the service, indicating that using SMS messages was an effective way to reach its target group of pregnant girls and young mothers.

SafeBoda's success in reaching girls is evident from its KPIs. In the two years following its baseline in July 2016 – June 2017, SafeBoda reported 246,203 application downloads among girls aged 10-19. For reference, SafeBoda's baseline figure stood at 883. Importantly, during the same time period, the number of active users (girls aged 10-19), which is defined as girls who actually used the app during the reporting period, expanded from 399 to 160,346. This is a 4000% increase in active users in just two years of operation, establishing SafeBoda's prominence in the market and strong user recognition.³

Evidence of **Maya's** success among the girl demographic is the level of growth it achieved from its baseline KPI data (July 2017 – June 2018) to the following year (July 2018 – June 2019). In one year, Maya reported a 196% increase in the number of new app downloads among girls younger than 20. Maya has had measurable success in both its reach and emerging impact among young girls in Bangladesh, which confirms its assumption that young girls are in need of a destigmatised access to information.⁴

Cherehani had fair growth in its KPIs from one year to the next. In its first year of reporting KPIs (July 2017 – June 2018) Cherehani recorded 20 new girl users (10-19 years) and 20 new loan recipients from this demographic, and 2402 new girl users over the age of 20. In the following year, Cherehani grew its operations in this younger demographic, with 139 new girl users (10-19), 57 new loan recipients (10-19), and 7000 new women users (20+). Cherehani's success in working with older users likely reflects additional barriers faced by younger female micro-entrepreneurs in Kenya. Cherehani's experience is further highlighted in our [BPE thematic report on reaching girls in the value chain](#).

MHI sustained its growth over two years of operations. At the time of baseline reporting in June 2017, MHI had only 131 girls aged 10-19 covered under its health insurance, and the Dada Card prototype had not yet been launched. Two years later, in June 2019, MHI had insured 1175 girls and sold 532 Dada cards. Through it remains to be seen whether this rate of growth will be sustained in the long run, initial indicators are positive.

Along the self-reported, girl-specific key performance indicators, only two companies experienced slowing growth. A third company experienced low growth in users during its participation in the SPRING programme. Potential reasons for these cases are discussed in [Section 2.2](#).

³ As SafeBoda was not recording girls' age at the time of the spot check conducted by Coffey in 2018, these numbers are based on estimates.

⁴ As Maya was not recording girls' age at the time of the spot check conducted by Coffey in 2019, these numbers are based on estimates.

2 Findings

2.1 Reaching girls through technology: what worked

Across the businesses that were successful in reaching larger numbers of girl users through technology, our analysis identified unique combinations of various factors, including factors internal and external to the business, which affected their operations. This section outlines these factors and explains how SPRING businesses were able to use them to their best advantage. It also presents an assessment of breadth versus depth of reach to see which businesses were able to engage and retain users and continue to provide their girl-focused products over time. The businesses' self-reported KPI figures, presented in [Section 1.2.3](#) and outlined in [Annex B](#), help inform this analysis.

2.1.1 Business strategies and operations enabling reach

Ten of the thirteen tech SPRING businesses reached girls through **digital and social media platforms**. Many SPRING countries have robust populations of social media users⁵, including but not limited to Bangladesh (estimated 16.1%), Kenya (20%), Pakistan (13.8%) and Uganda (15.6%). SPRING businesses found that **advertising, outreach and information campaigns through social media were crucial to build awareness of their brands and products, as well as disseminate information on causes or issues**. A discussion with users of **Khalti's** Smart Chhori platform found that all of them had learned of it through Facebook. Another example is **Pan Ka Lay** (PKL), which conducted its entire *So What!* campaign, aiming to destigmatise menstruation in Myanmar, through social media platforms. PKL increased its online presence through endorsements from celebrities and high-profile doctors, which had the dual effect of raising the profile of the *So What!* campaign and its credibility, leading to very high recognition among its target audience.

Another effective strategy was to accompany a digital approach with the physical presence of human representatives. This was used by both 'direct' and 'indirect' tech-based prototypes. Businesses found that a human face was often needed to support digital communications and raise brand recognition. This strategy was most successful when using representatives to establish a presence in locations frequently visited by target users. Locations varied according to the business model, and included universities, local events, and medical centres. **Rooster Logic**, for instance, decided to recruit potential girl enumerators for its Sukarni programme at schools and universities:

"What we have done is we have gone to colleges and worked on a reach-out to the people, and now what we have seen, in Kathmandu at least, when we get what we want." (Rooster Logic staff member) BPE Sustainability Interview

SafeBoda launched a Brand Ambassador programme to supplement its digital programme with human representatives at Nepalese universities, who encouraged university students to download and use the app. Reportedly, this made the technology more relatable to potential users and enabled the business to reach a higher number of new users aged 18 to 19 years. Similarly, **Totohealth** stationed female representatives in maternity wards to increase subscriptions to its SMS service.

Some businesses also found it helpful to **accompany digital content with human staff** that can clarify information, answer user questions, and explain the product in real time through direct communication. Recognising the complexity of healthcare information, companies such as **Totohealth**, **Maya** and **Sehat Kehani** set up ways for their customers to ask questions on the information received through SMS, in-app forums and through the presence of in-person community health workers, respectively.

A third strategy that led to meaningful engagement with business prototypes was building a level of flexibility into business operations for being responsive to changes in user behaviours or demand. This was informed by the use of Human Centred Design (HCD) to increase product relevance and benefits among users through research with potential customers. For instance, HCD helped **Cherehani** identify where customers spend most of their time within the app. This information was used by the business to optimise its operations through the development of the customer relationship management (CRM) tool, a database which

⁵ Newzoo Global Mobile Market Report (2019). Available from: <https://newzoo.com/insights/trend-reports/newzoo-global-mobile-market-report-2019-light-version/>

helped it harvest data on its users and use it improve their experience using the app. For example, it transitioned to mobile payments to reflect user preferences, which made the entire loan cycle more efficient and user-friendly. Ultimately, these adjustments improved Cherehani's scalability.⁶

"Optimising the relationship with the customer [was] key for identifying ways to scale." (Cherehani staff member) BPE Case Study Interview

Box 1. Combining technology with in-person engagement – the case of Sehat Kehani

Especially in cases where the primary target beneficiaries were lower-income, some businesses found that technology allowed them to serve markets that were previously considered inaccessible. Sehat Kehani uses mobile technologies to provide affordable and quality healthcare to girls and women in marginalised communities in Pakistan. Its prototype aims to address two market failures: i) limited access to high-quality healthcare for women and girls in low-income communities; and ii) low inclusion of female doctors in the workforce. The key idea of its model is to bring non-practicing female physicians into the workforce by allowing them to practice from home. In turn, female doctors are put in contact with women and girls in low-income communities through nurse-assisted online consultations. Their use of technology is reducing the distance between marginalised girls and healthcare providers, while at the same time empowering qualified, but culturally constrained women professionals.

A key assumption of this model was that girls and women would feel more comfortable seeing female, rather than male doctors, and that technology would enable them to do so by circumventing mobility barriers. Low patient numbers showed that there were underlying issues left unaddressed by this approach.

Patients were sceptical towards the use of technology for medical consultations and perceived this as being lower-quality and less trustworthy than in-person visits. Additional problems were posed by low awareness of the importance of health and well-being among women and girls in the target group, and limited mobility outside the home faced by girls, which made it difficult to reach the clinics.

Additional research showed that deploying in-person community health workers and mobilisers, providing at-home visits, and organising community-based awareness raising sessions in conjunction with the technological offering, were crucial to increase trust and familiarity with the technology, as well as awareness of health in general. As a result, Sehat Kehani was able to significantly increase its girl reach.

On the product side, successful firms were able to adapt their products to meet customer demand. **The HCD approach was key to businesses' success in further developing their prototypes and improving their offering.** Generally, this required businesses to re-evaluate their initial product design or outreach strategy. For example, LearnObots used HCD to observe user behaviour, and designed a new product to overcome girls' reluctance to engage in STEM education by creating a learning tool that could match their areas of interests and desire for creativity. The business was able to offer its product in a more accessible way for its target users, which ultimately increased appetite for its offering:

"So we started off with robotics, right. So his sisters didn't like robotic because it was too tech-y and they were more towards art and stuff, so we made this educational kit for them. What happened was they made this house, then they had to paint it and then do the wiring, attaching the LEDs and fans. Because it was cached in terms of design, when we introduced electronics and the wiring and LEDs, fans, and then took it out and [the girls] were like, 'Electronics is so cool! Electronics is so cool!'" (LearnObots staff member) BPE Case Study Interview

In places or among target groups where smartphones were less prevalent, some companies decided to **make their services available via more appropriate technology, such as SMS messages, which do not require mobile data or access to smartphones.** This is the case for **Totohealth** and **Cherehani**, both operating in Kenya. Using SMS-based communication was crucial to Totohealth's success in reaching its target demographic: pregnant girls or young mothers and fathers who do not have sufficient access to reliable healthcare information. Because a significant portion of Totohealth's target audience is made up of individuals

⁶ Cherehani BPE Case Study, 2019.

from marginalised communities, communicating through SMS proved more appropriate, as users in these communities are not always able to afford more expensive smartphones and data services.

More generally, the experience of SPRING businesses shows that **user data is an essential part of most tech-based interventions** and a source of competitive advantage over more traditional competitors. Access to user data and behaviour, through the use of apps or websites, enabled businesses to effectively tailor services or products to existing girl users. By knowing the specifics of girls' behaviour and demographics, businesses gained insight into market demands. One executive at **Cherehani** explained what having access to user data meant for their company:

“And, so, yes, being able to visualise all this [data], to see sort of our customers, the type of businesses are in they are doing, the group that they, accounts. So, really just having access to customer data. So, we know the business that they're doing, we know their age, we have their phone number, their identification number, or even when that account was set up on this platform. This is very important internally.” (Cherehani executive) BPE Case Study Interview

Partnering with other girl-oriented initiatives was another factor that enabled businesses to reach girls. For example, **Maya** partnered with BRAC's Urban Development Programme (UDP) to provide access to health experts among garment workers and their families in the towns of Tongi, Savar, and Gazipur. **Khalti** collaborated with like-minded companies and initiatives to improve its brand recognition and accompany digital marketing with an in-person presence. Khalti also partnered with local businesses to facilitate and encourage the use of its mobile wallet. Partnering with similar businesses can be particularly useful to businesses whose service is partially dependent on other service providers, such as electronic wallets.

“We started partnering with more girl-focused merchants, like Pathao and Tootle and Urban Girl and Foodmandu and all. So, assuming that girls would want these services more. And then we also started targeting girls through events. So, there are a lot of events which promote girls, like Women Leaders in Technology or Women Tech Makers.” (Khalti staff member) BPE Case Study Interview

Finally, reach through technology was successful where businesses designed a product for which the benefits were easy to understand. This was possible for businesses providing technological solutions *within* firmly established markets, and for which the offering was not contingent on significant external or attitudinal changes among clients. Having simple, straightforward products which do not require up-skilling or information campaigns is proving successful. This is best illustrated by SafeBoda, which offers an accessible and easy to understand tech-based service in a well-established market of transportation solutions.

2.1.2 External factors enabling reach

In many contexts, businesses' operations and strategy were enabled by external factors, including the availability and accessibility of internet connectivity and mobile phones, broader changes in the economic environment, and the availability of relevant partners. The most successful companies were able to leverage their environment to increase their ability to reach girls through technology.

In most countries, businesses found that their **target groups had sufficient access to and familiarity with technology** and successfully capitalised on this. This was typically the case for businesses that created a product for customers in wealthier, urban communities. In these locations, businesses were able to rely on local markets' ability to sustain mobile, or smartphone-based applications. In particular, **SafeBoda**, **Maya**, and **Rooster Logic** all found that it was common for girls in urban and peri-urban areas in their respective countries of operation to have access to smartphones and mobile data.

In the case of Khalti, operations were aided by the digitisation of the wider economy. The Government of Nepal recently allowed for electronic payment for utilities, sparing citizens costly journeys and long queues at collection offices. This is part of President Bhandari's government plan, announced in 2018, to deliver services through the use of ICT. The country's move toward digitisation and the growing number of merchants accepting digital payments has increased the suitability of Khalti's digital wallet to the Nepali market, which can only be used for digital transactions. Reflecting these broader changes in the economy, 1,596 Smart Chhori wallets, designed specifically for girls and young women, were opened in the first year the product was

introduced. As Nepal's economy becomes more digitised — presuming that it also formalises⁷ at the same time — Khalti's relevance will expand in conjunction, providing more opportunities for digital wallet users, including adolescent girls.

2.1.3 The issue of user retention and engagement

In assessing the reach of technology-based SPRING businesses, it is important to consider user retention. This refers to the ability of a company to retain its users over time and the willingness of customers to return to a service or product. Unless a business is providing a single-use product (such as a vaccine), retention is a key indicator that a product is continuing to be of value to its users. Engagement is a concept similar to retention, which reflects how actively customers are using a given product.

The experience of SPRING businesses shows that, for many tech businesses, retention remains an elusive goal. While technology enables companies to reach thousands of people with the click of a button, engagement requires active use of a product or an app.

Generally, businesses struggle to achieve user engagement: most products reach high numbers of people, but levels of utilisation fall below anticipated levels. For instance, one financial services company struggles with passive users, meaning users who do not engage with content or utilise its services. This business has been growing quickly in terms of reach, but has been facing several challenges, among which the crucial challenge that people tend to download but not use the app.

“Now, we launched, we tried to build things first, we did everything but now our biggest challenge was people downloaded it but people not using it. [Of eight hundred thousand downloads] only ten to fifteen percent people are active. So, this is one of the biggest challenges”. (Staff member) BPE Case Study Interview

Another business is experiencing a similar challenge. While its new technology allows girls to carry out transactions from their homes without consuming too much time travelling to banks and incurring additional costs, these services are not used by many girls, especially younger ones. Consequently, the product currently does not contribute significantly to the bank's savings portfolio.

Anecdotal evidence shows that some businesses were able to successfully get target users to use and engage with their service or product and achieve high retention and engagement. One mechanism for doing so was **providing useful, engaging and relevant information** – reflecting businesses' understanding of their target users. For instance, **Maya's** mobile app was used daily by the small sample of adolescent girls included in an internal survey conducted as part of the BPE Case Study. Six out of eight girls reported an improvement in their situation at home following use of the app. For one user, Maya was so informative that it replaced Facebook as her default browsing website.

“Every week. In my free time, instead of following Facebook, I prefer to see the questions [referring to Maya Apa's application's Q&A pages on which users post questions which will be answered by representatives of Maya Apa. Often one user's questions will be relevant to many others]”. (Maya girl user) BPE Case Study Interview

Box 2. Engaging users through social media: the case of Pan Ka Lay

Pan Ka Lay (PKL) has had measurable success in retaining its users of its digital *So What!* campaign. A survey of PKL users found that once women and girls see the campaign video, they return to it and to the *So What!?* Facebook page frequently – either daily or weekly – predominantly to learn more about the issue. While it is too early in the campaign's existence to fully measure impact, the fact that women return to the same video testifies to PKL's ability to retain users through providing practical, relevant, and desired content to girls and young women in Myanmar.

Businesses can also achieve high retention by offering a product that is market competitive and easy to use. **SafeBoda's** ride-sharing app allows users to digitally hail a *boda boda* and set a location for pick up. This saves users the inconvenience and risks of having to wait for a *boda boda* driver on the street. The added safety provided by arranging a ride ahead of time also allows greater mobility for girls, particularly at night.

⁷ Formal business registration is a requirement for accepting digital payments in Nepal.

These benefits are not unique to SafeBoda—there are other peer-to-peer ride sharing apps in Kenya— but users explained that SafeBoda had the highest supply of drivers, leading to short wait times.

“[SafeBoda Drivers] are everywhere, but that’s the major thing. They’re everywhere. So, it’s not like Taxify where, if get you one, it’s fifteen minutes away. It’s always there. They’re always there. And then they’re just...they’re convenient, they’re more convenient.” (SafeBoda girl user) BPE Case Study Interview

2.2 Reaching girls through technology: what did not work

SPRING businesses faced various challenges in reaching girls, including factors external to the businesses or their prototypes, often amplified by poverty, as well as factors internal to the business, such as business strategies and operations. As briefly touched upon in the previous chapter, creating products that keep users engaged over time proved most challenging for four businesses.

As presented in the KPI analysis in [Section 1.2.3](#), only two companies experienced slowing growth in users while a third experienced low user growth during their participation in the SPRING programme. For one of the former companies, this may have been due to low visibility. The business’ case study, conducted by Coffey, found that women in the business’ target market simply had not heard of the business and suggested that visibility could be increased through ads and radio.⁸ A second company experienced slowed growth because it faced increased competition, and no longer has first mover advantage in the e-health sphere. The third company with low user growth figures faced expansion challenges from the outset. As an ed-tech business, it faced slow growth because its customers, schools, would only enrol once a year, at the start of the school year. Therefore, this business had only a brief window of opportunity to generate sales. Furthermore, it had to convince multiple stakeholders, each with their own perspectives and priorities, of the value of its services, which proved difficult for the small team to manage.

2.2.1 Business operations impeding reach

Internally, businesses’ efforts were mostly impeded by not knowing enough about their context of operation. This occurred especially where businesses were unable to obtain data on their current users or get accurate figures on total numbers of users.

First, it has proven difficult for firms to produce reliable estimates of the total number of girls reached and inform their operations. This has occurred mostly when businesses could not verify that users were indeed girls. For subscription-based services, where young girls accessed digital platforms, total-user figures may have accidentally counted parents who enrolled on their daughters’ behalf. This was more prevalent among younger girls, who have less autonomy over their communication and use of technology.

Its relative anonymity is one of the downsides of digital interaction with customers. Some businesses did not require girls to input their age when registering. Although this may be due to strategic reasons, it limited the business’ ability to understand girl-specific usage of their services and how best to respond to observed trends. It is also possible that multiple girls used the same accounts to access digital services. From the company’s perspective, this could result in underestimating the total reach of a given product. This, in turn, could misinform engagement needs and evaluations of outreach strategies.

Another challenge faced by businesses was related to collecting data or additional research on their clients. For app-based interventions, the absence of comprehensive data on users limits the ability to optimise operations. Manual data collection is a costly and time-intensive operation for the businesses to perform. One business was not able to collect data automatically and the alternative of doing market research was prohibitively expensive. This meant that it had sub-optimal knowledge of its target market. A second business struggled with this issue because clients did not want to provide personal information. In one case, requesting user data resulted in high levels of drop-out. It can also be time-consuming for users to input their data manually and can often discourage them from submitting their information entirely. Others may wish to remain anonymous, particularly where the topic matter is sensitive or seen as taboo.

⁸ BPE Case Study Report, November 2018

On the contrary, automated data collection, for instance from Facebook, requires little work from the business and does not burden clients with excessive questions. But in trying to obtain user data, businesses may not always be careful enough in explaining to the users how their data will be used.

Finally, some businesses had difficulty keeping users engaged. In particular, one business found that its app was not sufficiently user-friendly and did not have enough features to keep girl users engaged. Additionally, in focus group discussions, girls stated that they had difficulty navigating through the app and finding the content specifically designed for girls. This suggests that tech-based initiatives are not always sufficiently mindful of the technological literacy of their customer base.

2.2.2 External factors impeding reach

While the use of technology for development has created numerous opportunities for businesses to reach girls, challenges for technology-oriented businesses and their offerings remain. Among these structural impediments are access to technological equipment, the public's unfamiliarity with technology, large informal economies, and legal and cultural barriers, which are greater in lower-income groups. Other obstacles external to the businesses include low market penetration of affordable technologies to the average consumer, unfamiliarity with using technology and a resulting "techno-phobia", and legal restrictions on operations, mostly relating to sharing content with or working with minors. These external challenges are often amplified by poverty. Businesses working in low-income communities faced greater barriers than those working with populations already familiar with technology and enthusiastic about the changes it can bring.

The greatest barrier to successful tech-based interventions was lack of access to the physical technology required for use. Among SPRING businesses, this manifested in inadequate mobile phone ownership and insufficient coverage for users. One business admitted that phone ownership was "seriously" low in their target audience. Very few of their customers owned a smartphone, and very few of those who had been given a phone as part of the business' pilot were using either their smartphone or the app. Arguably, the challenge here also lies within a lack of businesses' understanding of their target audiences.

Findings suggest that access to technology is largely age- and location-dependent. Younger girls were less likely to have their own smartphones. For example, one business reported that few girls in Nepal under the age of 16 or 17 own one, suggesting that interventions that require the ownership of technological devices may not be as suitable for younger target groups as older ones. Most younger girls can only access the service if their parents use the app on their behalf. Finally, **providing national coverage was difficult** for some growing tech firms. One healthcare provider found it difficult to ensure the functioning of its product when girls travelled to their boarding schools outside of their registration district. Furthermore, **expanding the geographic scope of operations posed additional challenges.** In their expansion into new areas, businesses were likely to encounter barriers in reaching women and girls from different socio-cultural contexts. Cultural impediments tended to be greater in poorer, more rural areas. For example, a focus group discussion with girls identified the difficulty rural girls would face, relative to their urban counterparts, in accessing the necessary technology for an app-based service:

"[Focus Group Participant] thinks that it would be difficult for girls outside of Kathmandu to get access to these kind of platforms and to actually get parental consent to even own a smartphone. In her village, girls are not usually allowed to go out of their village and study in a different city. So, this kind of orthodoxy, or conventional thinking is still present." BPE Case Study Interview

Second, businesses experienced difficulties engaging users who were unfamiliar with technology and therefore hesitant to trust electronic or app-based services. This was particularly the case for businesses targeting lower-income groups, or that were providing advice to users through electronic messaging or aiming at behaviour change among subscribers. A representative from one business explained how fundamentally their product depends on the assumption that customers will trust their products. Supporting these digital interventions with careful face-to-face outreach efforts helped establish trust with their users.

"I think there's also a huge fundamental belief...that, somehow, we are able to build customer trust via mobile because things here we're doing messaging on mobile, doing a lot of communication on mobile, but there's an assumption that customers will actually trust that. We have scenarios where they look at that with some level of discomfort or some level of doubt." BPE Case Study Interview

Another business experienced a similar issue with their users' trust of electronic banking. When depositing money electronically, some users worried that an error would occur that would make them lose their money. A third business also received feedback from users who reported a preference for face-to-face interaction rather than virtually, a method perceived as less vulnerable to spam or fraud.

Third, the presence of large informal economies complicated the performance of tech-based businesses, particularly those which worked in the financial sector and came into direct contact with informal firms. The use of e-wallets was limited by the prevalence of informal businesses, which do not issue receipts and are incompatible with the e-wallet's payment system. This suggests that a business' product research and development should keep pace with the digitalisation of its market of operation. It also suggests businesses as well as business accelerator programmes should carefully consider the practical realities for change in their target markets before committing the time and resources to a product that could be "ahead of its time".

"A lot of merchants here, they are in informal economy. They don't do proper taxes and billing, so they don't want to come into wallets, or a lot of merchants do not have an online billing system. So, this problem is a core-product problem that has to be solved with a core strategy." BPE Case Study Interview

Finally, national legal restrictions impeded the operations of several businesses. Businesses focusing on the areas of healthcare and financial services experienced the greatest regulation on their operations. In terms of reach, one business was only able to onboard girls for loans who were 18 years or older. This is because having an identity card was necessary to register on the app-based system and getting an official loan in ones' name. Another business had to limit its app to users aged 16 and above, because national law prevented younger girls accessing sexual health content. For a third business, girls under 18 years of age were considered minors and were required to have joint bank accounts with an adult co-signatory due to the legal limitations to account ownership. This limited the ability of girls to use ATM and Mobile Money services. More broadly, while many of the issues SPRING businesses were trying to address affect young girls directly, minors often have limited agency and decision-making ability in these fields.

2.3 Comparison with initial assumptions

Business prototypes are typically based on assumptions about their context of operation and their target users, for instance appetite for and relevance of the offered product or service, accessibility to the product or service, and user agency. This section explores where these assumptions held and where they did not and discusses the implications of this.

All businesses assumed that there would not only be sufficient access to technology in the target group, but that markets for their product or service would continuously grow each year. Given some of the dynamics of the technological development in target countries, with societies increasingly becoming digitally connected and access to internet and mobile phones continuously growing, these assumptions seem to have held. Apart from two businesses, all others were correct in assuming that tech-based interventions would be relevant and could sustain growth in their respective contexts. In the two cases where this did not happen, this was primarily due to over-optimism in the market's appetite for technology-based interventions.

"Even people that are illiterate have mobile smartphones here and it's amazing. So in terms of the possibilities of reaching someone, I'm excited about the possibility about that phones have here, and they all have smartphones here, they're 90% smartphones, because they never went through the non-smartphone era." (Pan Ka Lay Staff Member) BPE Case Study Interview

Implicit in this line of thinking is a second assumption that potential users recognise the utility of technology generally and of the specific prototype and understand its applicability to their lives. Findings here were more mixed, with some businesses experiencing challenges related to users' understanding of the technology, its utility and applicability. This was especially the case among lower-income populations, who had had less exposure to technology in general. This suggests that the presence of and access to technology are not always sufficient to ensure that products and services would be taken up and used. This is a crucial consideration for any tech intervention in markets with nascent digitalisation.

A related assumption, primarily present in platforms that provided educational or awareness-raising material, is that girls would demonstrate knowledge-seeking behaviour and voluntarily use services to

improve their knowledge. This assumption underpins the business models of four tech-based healthcare initiatives: **Totohealth, Sehat Kehani, Maya Apa** and **MHI**. In all four cases, findings suggest that businesses were correct in assuming this; girls recognised the value of the service and actively engaged with the educational material. Findings from SPRING's 2018 Business Performance Evaluation for Sehat Kehani, however, suggest this assumption may not hold true in the long run, especially when the intervention tries to encourage girls to implement the knowledge gained and engage in health seeking practices. The report states that such interventions may be impeded by social norms in which young girls do not have agency in decision making relating to their own healthcare.

Assumptions that did not hold include those relating to girls' aspirations and appetite for the benefits that the products or services intended to deliver. One business model for instance relies on users' desire for more efficient service delivery through technology. Findings suggest that this did not always hold true. In this particular case, the business struggled with users' reluctance to adopt new technologies, even when provided with free hardware. This suggests that some interventions may be less relevant than anticipated when users are expected to change their set ways of doing or thinking. More effort will be needed to ensure uptake of these technologies, to stimulate demand and raise awareness on the benefits provided.

"The potential was just so, so huge, and it was shocking that it didn't perform as we had expected. So, that had a lot of negative effect in terms of how we think in the future... and they rejected that. I think you can't push people to something they're not ready for, or you can't assume some solution to a problem that is not there." (Cherehani Staff Member) BPE Case Study Interview

Another, more girl-specific, assumption which did not hold was that younger girls would be open to new ways of thinking and be interested in challenging existing gender norms and expectations, particularly that they would have different outlooks and aspirations compared to older people such as their parents. Businesses expected that girls would be more open to 'disruptive' tools and technologies. Findings suggest that this is not always true: **girls often still prescribe to traditional roles and reject some of the changes encouraged by SPRING businesses or their services and products.** Two businesses working in healthcare found that some users were very committed to their way of life and had no intention of adopting new habits. This was an issue as those companies had assumed that their customers would be motivated to change.

"So I think one aspect that we thought that it was that they are women from this generation, they should be aspirational and all of that, but, when we met them, that's not the case. They're so lost in hope and it's not...you don't feel like you're talking to a person younger than you." (Sehat Kehani Staff Member) BPE Case Study Interview

However, in some cases businesses were positively surprised compared to their expectations. Most commonly, this occurred **when businesses had predicted lower market penetration of smartphones** than what was observed. For example, **Rooster Logic** had anticipated lower numbers of smartphones in rural and peri-urban areas, but following girl research, found that roughly 35% of people outside of Kathmandu had access to Android smartphones. Similarly, **SafeBoda** expected that younger girls would have less access to smartphones, and would be unable to use their ride-hailing app. On the contrary, the business found that some girls as young as seven had smartphones and used them for transportation:

"Some of them, they are seven years. They are shocked. They have a smartphone. Their parents, they got them smartphone, they know how to request SafeBoda. They said, no, I cannot use another boda. If it is not SafeBoda, then I'm not going." (SafeBoda Staff Member) BPE Case Study Interview

Although it is likely that this level of access to technology is restricted to higher-income groups, girls are a demographic which can potentially support growth in the future, as smartphones start being acquired by progressively younger users.

3 Lessons learned and recommendations

This thematic report has explored the experiences, challenges and achievements of SPRING businesses that used technology-based interventions to reach adolescent girls. This section includes considerations for future programming seeking to reach adolescent girls through technological solutions.

3.1 Lessons learned

- **Businesses were successful in reaching girls where their external environments were favourable to the technology used.** This was especially the case where businesses targeted groups with sufficient access to and familiarity with technology to be able to engage with the prototype.
- **Businesses were successful in reaching girls when they undertook sufficient HCD research to inform their offering and were flexible enough to tailor it to this specific target group.** Some opted for SMS-messaging rather than app development when they understood that girls would not have access to this technology or to mobile data. This enabled them to reach vulnerable and low-income groups, such as urban poor, rural micro-entrepreneurs and adolescent mothers.
- **Businesses were successful in increasing up-take of their technology when they used a combination of in-person and technological service delivery.** This increased users' awareness of and trust in the technology itself. Seven of the sampled businesses used in-person marketing and user engagement meetings to introduce potential users to the technology and encourage download.
- **Businesses were less successful where they did not have sufficient familiarity with or did not undertake sufficient or contextually-relevant HCD research on their target group or their context of operation.** Here, take-up was often lower than expected, as the businesses did not have a clear understanding of the barriers, they would face in reaching their target population through technological solutions. Arguably, the challenges presented below can all be linked to a lack of sufficient understanding of businesses' target group and context of operation.
- **Businesses faced challenges in reaching girls in contexts where there was low penetration and use of the necessary technology, often compounded by age.** Reaching girls below the ages of 16 and 17, was more difficult as they often lack access to their own phone.
- While many of the issues SPRING businesses were trying to address affect young girls directly, **businesses faced challenges in reaching girls in contexts where minors often had limited agency and decision-making ability in these areas, such as legal restrictions.** While this does not present a technological barrier as such, it is important to consider in cases where businesses use technology as an instrument to circumvent access (such as socio-economic) barriers.
- **Businesses faced challenges in geographic expansion, especially if it was into more rural, or lower-income areas.** In addition to the enlarged logistical management of broader distribution, geographic diversity also posed some challenges in terms of community attitudes and perceptions.
- **Businesses faced challenges in creating demand for products and services where technical literacy and awareness among girls was low.** Offering an innovative, more efficient product did not automatically result in increased demand. Some tech-based initiatives were not sufficiently mindful of the technical literacy of their customer base, or of the additional awareness-raising and engagement efforts needed to ensure increase in demand among potential customers.
- **Businesses faced challenges in increasing potential girl users' trust in the technology offered or used** – which may often depend on having in-person engagement and contact in the first instance. This was particularly the case in nascent markets for tech-based solutions.
- **Businesses faced challenges in reaching girls due to difficulties gathering accurate data on their users.** This is due to the greater anonymity of tech-based interventions. Lacking specific information on girl use and preferences can limit business ability to tailor products to their needs.

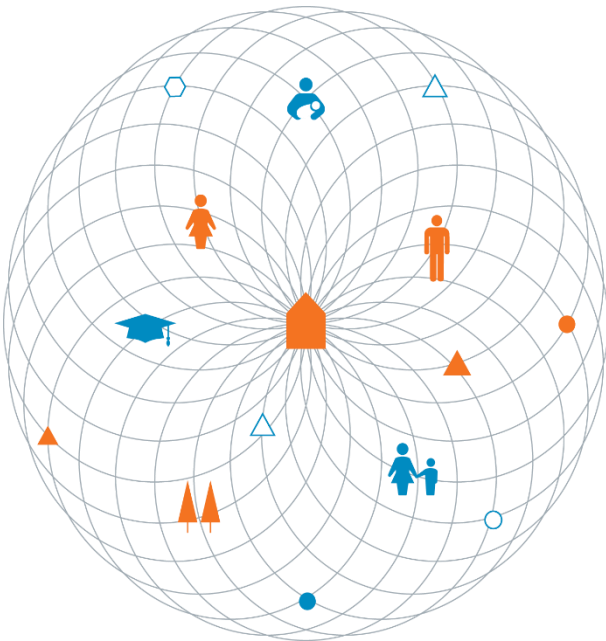
3.2 Recommendations

- Generally, HCD processes should be revisited and better tailored to ensure more relevant and comprehensive research and prevent common barriers that results from a lack of understanding contextual specificities.
- Although most of the SPRING target countries have high potential for mobile penetration and tech-based solutions, these must be accompanied by in-depth research on specific target groups, contexts and potential barriers. Especially when attempting to achieve behavioural change, or work on 'taboo'

subjects and with stigmatised groups, programmes should not assume that girls or young people in general will be open to the type of change that is offered.

- Additional engagement is needed to achieve lasting social norm change and increase demand for innovative products. There needs to be more careful consideration and assessment of the reality of the target groups and of the complexity of social norm change before launching an intervention.
- Careful research on the target group, such as the HCD user journey mapping, should be further encouraged and accompanied by flexibility in the business approach, and tailoring the choice of technology to girls' specific needs and constraints. This may also mean adapting the product in 'real time', based on user behaviour and preferences.
- As adolescent girls are a highly heterogeneous group, app-based, smartphone technology may not always be the appropriate solution, particularly to reach more remote, younger, and poorer girls. App-based solutions might best be suited to older, wealthier and more technologically savvy girls.
- Adolescent girls are often hindered in making independent decisions on crucial areas of their lives including health, mobility, education and entry into the labour market. It is challenging to reach them directly without engagement with key decisionmakers, such as parents and guardians. Behavioural and practical changes in girls' lives may only be realised through changes in their parents and community. Initiatives seeking to engage with younger age groups should think of ways to overcome those barriers to girl reach and include gatekeepers in awareness-raising and engagement activities.
- Technological solutions are often very novel, especially in the context of developing countries. Developing trust in the technology through face-to-face engagement and follow-up is crucial. It is important to effectively communicate the benefits of using the technology and provide training and in-person support, particularly among less tech-savvy groups and to foster use in the medium to long term.

Annexes



Annex A – Technology Business Profiles

SPRING Cohort 1 businesses

Finance Trust Bank (FTB) provides financial solutions to low- and middle-income individuals, companies and institutions in Uganda. It focuses on women as its main beneficiaries with its tagline “Putting Women First”. With the Girl’s Choice Savings Account (GCSA), the product that FTB has scaled-up through SPRING, FTB is trying to encourage girls to save money. The GCSA product targets adolescent girls aged 10-19 years old, recruited through girl ambassadors and FTB mobilisers in their schools and communities. The account offers them financial and non-financial education in order to pay for their education, open a business or just increase their financial independence and empower them to have stronger agency regarding their lives and their future. The business’s core assumptions are: i) girls are entrepreneurial and have the skills to start enterprises; ii) girls desire greater agency in financial matters and iii) knowledge of and access to such services are the only barriers girls face in achieving financial agency.

Totohealth is a Kenya-based start-up company providing products and services to mothers and fathers during pregnancy and during the first five years of their children’s lives. The company’s main business line is an SMS-based service that provides health and child development advice based on the stage of the mother’s pregnancy or the age of the child. With SPRING support, Totohealth developed a product specifically aimed at girls and young women, creating instructional content for women and girls’ maternal health. Totohealth’s business model is based on the following assumptions: i) women and young girls in Kenya have access to mobile service and a phone with SMS capacity; ii) users are sufficiently literate in either English or Swahili; and iii) there is a market of women who express moderate degree of health-seeking behaviour.

SPRING Cohort 2 businesses

Rooster Logic is a technology company which provides real time information, data collection and analytical services across Nepal. It has developed an application whereby a mobile device is used to capture data, photos and global positioning system (GPS) locations to conduct surveys and research that produce real time data analytics. With SPRING support, Rooster Logic increased its focus on research, including data collection and analysis, as well as report writing. It also refined its targeting of adolescent girls by hiring them as enumerators through the Sukarmi programme, aimed at giving girls from diverse communities access to flexible, local and respectable jobs, allowing them to gain work experience and earn an income, thereby increasing their agency. This solution rests on two key assumptions: there are capable female enumerators who are familiar with technology and currently in the labour market; and the Nepalese public is willing to answer surveys delivered by adolescent girl enumerators.

Sehat Kehani provides affordable and quality healthcare to adolescent girls in marginalised communities in Pakistan via nurse-assisted video consultations, addressing two market failures: limited access to high-quality healthcare for women and girls in low-income communities; and low inclusion of female doctors in the workforce. Sehat Kehani leverages mobile technologies for video calling and data collection to provide healthcare services to girls and young women in rural areas or underserved areas through the recruitment of female community health workers and women doctors providing consultations from their homes. Sehat Kehani assumes that users are motivated to seek improvements in healthcare, can physically access their E-Hub clinics when necessary, and have sufficient agency in making healthcare-related decisions for themselves.

SPRING Cohort 3 businesses

AcceleratED explored the development of a technology-based platform for teacher training in Ethiopia. Regrettably, they ceased operations after struggling with low demand for a digital platform owing to Ethiopia’s low level of technological penetration, a lack of reliable internet access and low smartphone ownership. The SPRING prototype was TeachEasy, a personalised teacher training programme that focused on helping teachers improve their pedagogical skills by promoting active learning techniques in the classroom. By improving teacher quality and creating an enabling classroom environment, TeachEasy indirectly improved students’ learning outcomes – formal academic achievement as well as the development of ‘21st century skills’ (creativity, collaboration and critical thinking). AcceleratED’s business model did not directly target girls as end users but assumed that they would benefit from improved teacher capacity and awareness.

Cherehani is a social enterprise that pursues the financial inclusion of female microentrepreneurs in underserved markets across Kenya. The company leverages mobile phone-based technology to provide women and girls in rural and peri-urban areas with credit as well as financial literacy content. Cherehani is attempting to digitise its operations, with SPRING support, through the Vuka prototype, a tri-part system comprised of a mobile app, a customer relationship management (CRM) database and a financial knowledge platform. Cherehani targets young women directly, but only micro-entrepreneurial youth who are interested in small loans and are restricted to users over 18 years old due to Kenyan law. The most immediate assumption Cherehani makes is that its customers have access to, use and have the means to service a smartphone, and also that they are digitally, and generally, literate enough to use the app's functions. Additional operational assumptions are that there is a market for Cherehani's offering: namely, that in rural areas, women and girl microentrepreneurs are actively seeking credit for their businesses. Cherehani also assumes that girls' value financial autonomy as a way to support their socioeconomic mobility and livelihoods, as well as those of their families and communities.

MicroHealth Initiative (MHI) is a non-profit organisation providing health insurance to individuals and families across Tanzania. Founded in 2013, MHI aims to provide affordable health insurance to low- and middle-income clients ('microinsurance') through a range of products that have built-in access to clinics and care. MHI promotes better service delivery by incentivising providers to invest in equipment, supplies and more user-friendly (including youth and girl-friendly) facilities. Through SPRING, MHI developed the Dada Card, a new girl-focused product. The Dada Card was developed to enable low and middle-income girls aged 10-24 to access more friendly and affordable health services, accompanied by other benefits in addition to health coverage, such as discounts at beauty salons or bookstores. MHI assumes negative views about private and public health services, common in Tanzania, will not discourage girls or their guardians from seeking health insurance. On the supply side, MHI assumes and that current insurance providers will be willing to invest in equipment, supplies and more user-friendly (including youth- and girl-friendly) facilities.

SafeBoda aims to provide safe access to informal transportation in Kampala by creating an app-based motorbike ride system with professional drivers that are trained in road safety, first aid, bike maintenance and customer care. SafeBoda's SPRING prototype consisted of incremental improvements to its product that would help them attract a higher number of customers in general and adolescent girls in particular. This had two main components: i) becoming more attractive to potential girl customers by improving messaging, branding, and a number of customer care features; and ii) reducing the time to arrival (TTA), between hailing a boda through the SafeBoda mobile app and its arrival, in order to improve the user experience. The girls targeted through the prototype are girls that are either sufficiently old, wealthy or tech-savvy to own a smartphone and handle apps with confidence, or who have parents who meet these criteria and use the app on their daughter's behalf. Target girls either commute to school or to university and regularly require public transport. SafeBoda assumes that girls have access to smartphones and have sufficient autonomy over their transportation and mobility to choose their method of transportation. SafeBoda thinks that girls should benefit by being able to study later at school or to socialise more, although this is highly reliant on the previous assumption that lack of safe transport options is the only barrier to these activities.

SPRING Cohort 4 businesses

Khalti facilitates payments for goods and services through digital financial transactions. These make payments easier and more accessible across Nepal. With SPRING support, Khalti developed an online digital financial learning platform within the Khalti app to teach girls and women how to use the digital wallet and increase the wallet's user base. In addition to the online platform, Khalti plans to carry out other complementary activities (including face-to-face activities) to promote the app and engage with its girl users to turn them into brand influencers. Smart Chhori is not only seen as an online learning platform, but as a campaign that targets and engages girls and women between the ages of 15 to 35 to promote the use of digital payments through Khalti. SPRING helped Khalti identify a potential solution to increase its user base by creating a learning platform to educate and facilitate online digital payments. First, this assumes that the development of app-based training modules and Khalti's promotion efforts will be enough to attract users who do not already have these skills to sign up for and complete the programme. Second, Khalti assumes that not having digital financial literacy is the primary barrier to girls using digital financial services.

LearnObots organises interactive workshops for kids in the areas of science, technology, engineering, arts and mathematics. Its new programme, RobotWala, brings hands-on maker education to schools in Pakistan

and provides science, technology, engineering, and mathematics (STEM) Education through Robotics Workshops and Learning Kits. RobotWala is the SPRING-funded prototype and builds on a previous product called CODI-Bot, which consisted of a robot base with 30-40 educational kits to use with the robot. While CODI-Bot kits were delivered, set up, and supported by LearnObots engineers and teachers in the classroom, RobotWala was developed to be more streamlined with regards to parts, accessible through an online portal, and scalable by minimising the human labour involved in delivery. LearnObots is not developing products specifically targeting adolescent girls, but its business case for reaching girls is that they comprise 50% of the market and are thus an important group to target from a business perspective.

Maya Apa is a Bangladeshi anonymous messaging platform that connects users with health advice, available on web, WAP3 and android. This app allows users to submit anonymous questions on health, wellness, and other topics, which are routed to vetted experts who respond through the platform, engaging in personalised back-and-forth consultations. Through SPRING, Maya improved its user interface and re-branded its app. This included improving user acquisition through the development of a physical card to sell in retail outlets; testing prescription services to retain existing users; and developing and testing methods to incorporate e-commerce of medical products. The services offered by Maya aim to provide valuable support to women and girls in a context where female health awareness and knowledge are dominated by traditional knowledge and affected by stigma. Maya's primary assumption for its operations is that sufficient numbers of Bangladeshi citizens are health-seeking, meaning they will have the initiative to seek information about, and practice, better health behaviour. Secondly, Maya hopes that improved access to information related to healthcare will produce better health outcomes among users.

Pan Ka Lay (PKL) came to SPRING with the intention to enter the market offering reusable sanitary pads to girls in rural areas. As a result of the SPRING journey and HCD research, PKL decided to refocus its work and develop the *So What!?* social media campaign, targeting girls in urban and peri-urban areas. PKL also to engage with influencers, such as mothers and men, to support spreading its message of menstruation being a normal biological process. The aim was to generate systemic change by influencing social norms and education around the topic, in order to support women's and girls' empowerment. PKL's most fundamental assumption is that through awareness campaigns girls will feel less stigmatised due to menstruation and increase their confidence to work, study, play sports, and socialise while menstruating. This, in turn, assumes that broader societal attitudes surrounding menstruation will either accommodate such changes in girls' behaviour or, an even larger assumption, that they will be changed by the campaign themselves.

RIZQ is a Pakistani social enterprise connecting food donors to food insecure communities, through a network of foodbanks and soup kitchens, aided by the use of technology. The SPRING prototype is focused on reaching local donors more effectively, to enable scale up and increase beneficiary reach. It consists of two components: i) creating a robust website and mobile app to serve as online touchpoints through which individuals can become donors and make one-off or recurring donations; and ii) developing an Enterprise Resource Planning (ERP) system, or an IT backend to the online touchpoints, allowing for effective inventory and beneficiary management, monitoring and reporting on donor activity and impact, ultimately leading to the smoother running of various foodbanks. RIZQ does not specifically target girls through its activities, but rather indirectly through households and schools. RIZQ's intervention is based on the following assumptions: that charitable donations will continue in the future; that these food donations will reduce food insecurity in low-income households; and that food donations can alleviate the malnutrition women and girls face in the home.

Annex B – KPI analysis

Table 1. KPI form analysis

Company	Jul 1, 2014 - Jun 30, 2015	July 1, 2015 - Jun 30, 2016	Jul 1, 2016 - Jun 30, 2017	Jul 1, 2017 - Jun 30, 2018	Jul 1, 2018 - Jun 30, 2019
FTB	new girls choice savings accounts: 1,606	new girls choice savings accounts: 673	new girls choice savings accounts: 2,009		
Totohealth	total girl new subscribers, aged 10-19: 200	total number of subscribers: 1,434 total girl new subscribers: 1,109	total number of subscribers: 2,641 total girl new subscribers: 1,207		
Rooster Logic		Total number of Sukarmis on roster as of end of reporting period 0	n/a	Number of new girl Sukarmis on roster over year 158	Number of new girl Sukarmis on roster over year 264 Total number of unique girl Sukarmis on roster as of month end 372
Sehat Kahani		Total number of unique girl beneficiaries: 3250	Total number of unique girl beneficiaries: 3521	Total number of unique girl beneficiaries: 1211	
AcceleratED			Total unique girls in AcceleratED classrooms (10-19) 0 Number of schools purchasing Teach Easy programme not reported	Total unique girls in AcceleratED classrooms (10-19) 4,700 Number of schools purchasing Teach Easy programme 8	Total unique girls in AcceleratED classrooms (10-19) 0, AcceleratED's operations ceased Number of schools purchasing Teach Easy programme 7
Cherehani			n/a	Number of new registrations, girls <20 20 Women aged 20+ 2402 Number of new unique loan	Number of new registrations, girls <20 139 Women aged 20+ 7000

				recipients, girls <20 20	Number of new unique loan recipients, girls <20 57
MicroHealth Initiative			Unique girls aged 10-19 covered by MHI health insurance as of end of reporting period – total 131 Total number of Dada Cards sold 0	Unique girls aged 10-19 covered by MHI health insurance as of end of reporting period – total 421 Total number of Dada Cards sold 261	Unique girls aged 10-19 covered by MHI health insurance as of end of reporting period – total 1175 Total number of Dada Cards sold 532
SafeBoda			Smartphone app downloads girls 10-19 883 Registered users who rode during the reporting period (girls aged 10-19) 399	Smartphone app downloads girls 10-19 n/a Registered users who rode during the reporting period (girls aged 10-19) 2,595	Smartphone app downloads girls 10-19 246,203 Registered users who rode during the reporting period (girls aged 10-19) 160,346
Khalti			N/A	# of unique girls (10-19) with active Khalti Smart Chhori wallets 2 aged 20+ 10 # of unique girls (10-19) starting Smart Chhori module n/a aged 20+ n/a	# of unique girls (10-19) with active Khalti Smart Chhori wallets 69 aged 20+ 1527 # of unique girls (10-19) starting Smart Chhori module 2057 aged 20+ 11156
Learnobots				N/A	# of unique students reached with RobotWala sessions 20 # unquie school clients (RobotWala) - total (new and repeat) 5
Maya Apa				# of new app downloads during reporting period aged 10-19 4755 aged 20+	# of new app downloads during reporting period aged 10-19 14082

ANNEX B: KPI ANALYSIS

				38473	aged 20+ 19768
Pan Ka Lay					# of girls receiving MHM education via So What?! campaign (e.g., unique video viewers) girls aged 10-19 149,350 women 20+ 471,607
RIZQ				Total # of unique girls (aged 10-19) reached via schools or households n/a # of unique families receiving food rations 272	Total # of unique girls (aged 10-19) reached via schools or households 910 # of unique families receiving food rations 3008