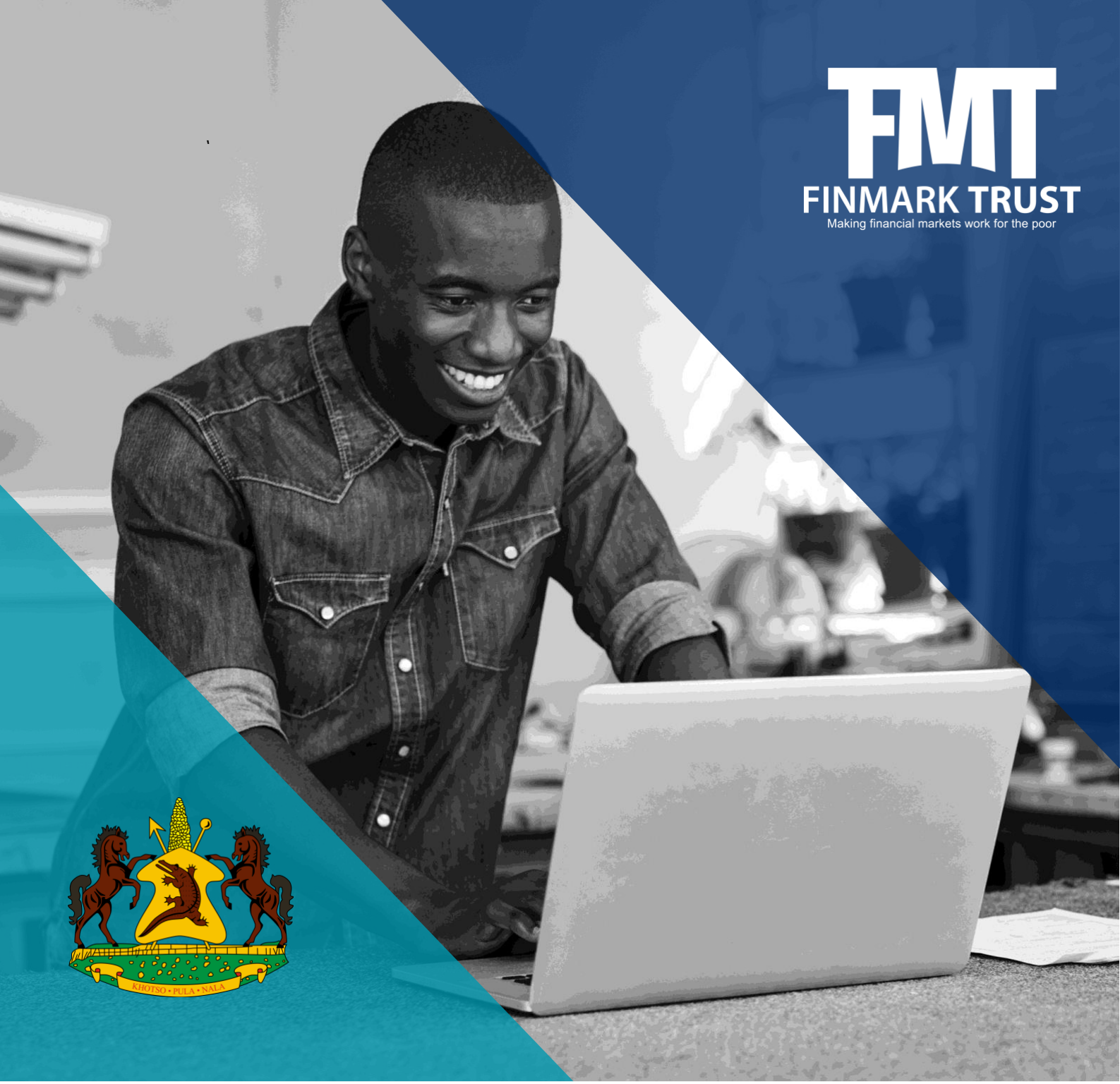

2018 Lesotho SIMM Hackathon

Maseru, Lesotho

April 20-22, 2018

Lesotho SIMM project is a product of the partnership of FinMark Trust, Lesotho Ministry of Finance and UNDP Lesotho.

United Nations Development Programme
Lesotho (UNDP Lesotho)
United Nations Rd, Maseru, Lesotho
Tel: +266 2222-8000
Fax: +266 2231-0042
www.ls.undp.org

Lesotho Ministry of Finance
Finance House, Government Complex,
Kingsway Road, Maseru 100, Lesotho
Tel: +266 2221-9900
Fax: +266 2231-7898
www.finance.gov.ls

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1. EXECUTIVE SUMMARY

From the 20th to 22nd of April, the United Nations Development Programme (UNDP) and FinMark Trust hosted the 2018 Lesotho SIMM Hackathon to promote product innovations for the advancement of financial inclusion. The competition aimed to generate new ideas and facilitate mobile money product diversification to unlock opportunities for improved access to financial services. Innovations in the mobile money sector provide an opportunity for low-income and rural Basotho to gain access to credit, savings and insurance products. The Hackathon provided a platform for young innovators to collaborate, while interacting with financial service providers (FSPs), mobile network operators (MNOs), business development partners, and civil society. The event targeted individuals with an interest in developing solutions to unique mobile money ecosystem challenges in Lesotho, with extensive support provided by mentors and key stakeholders throughout the competition duration.

Over the 3 days, 17 teams (62 participants) developed prototype solutions that were presented to a panel of judges during a final pitching session. Judged on a range of fundamental criteria, the 7 winning teams received a cash prize of $5000 USD, as well as continued mentorship and technical support to enable the development of their solutions.

2. BACKGROUND, RATIONALE AND OBJECTIVES

2.1 Background

Access to formal and semi-formal financial services is limited in Lesotho, especially for low-income and rural populations. The majority of Basotho are excluded from the formal credit system, while restricted accessibility and high pricing of banking products further limits uptake. The Lesotho Government has identified a lack of access to financial services as a major constraint to job creation and income generation, and have prioritized financial inclusion in the National Strategic Development Plan (NSDP) and the Financial Sector Development Strategy (FSDS).

"Financial inclusivity: a financial system that serves every individual with suitable tools that enable them to manage liquidity, achieve goals, and face shocks, and that ultimately contributes to an improved quality of life."

In line with Government priorities, the Ministry of Finance and UNDP developed the Lesotho Scaling Inclusion through Mobile Money (SIMM) Project, aimed at catalysing inclusive and pro-poor growth by scaling up formal and semi-formal financial services through mobile money. The Lesotho SIMM project promotes the use and adoption of technology, through mobile money, to develop solutions that enhance financial inclusion. The mobile money sector can be used as a channel to offer innovative and low-cost credit, savings and insurance products.

In partnership with FinMark Trust, UNDP hosted a Hackathon as part of the Lesotho SIMM Project. The 3-day event was held at the Avani Maseru Hotel from the 20th-22nd April 2018. The Lesotho SIMM Hackathon aimed to promote product innovations for inclusive financial services within the mobile money sector, with a particular focus on poor and rural populations of Lesotho. The Hackathon provided a platform for young innovators to collaborate and explore their ideas, while interacting with experts in the financial services, private sector, business development and civil society.

2.2 Rationale

UNDP conducted research into Lesotho's mobile money sector in March 2016 as part of the Lesotho SIMM Project, identifying systemic problems within the enabling business environment. Four key areas were highlighted that prevent mobile money products from reaching scale and providing valuable financial services to un(under)served Basotho. Based on the following systemic problems within Lesotho's mobile money ecosystem, the Hackathon set out to solicit new ideas that facilitate product diversification and unlock opportunities for improved access to finance for the poor.

a. **Awareness**

   Awareness of mobile money services is low, especially in rural areas, among adults and the elderly. The main causes include a lack of financial and technological literacy, as well as a lack of knowledge about the usefulness of mobile money services.

b. **Acceptance**

   A narrow product range, services that are not tailored to the needs and demand of low-income customers, a lack of regulation, and a shortage of technological understanding make mobile money a relatively unattractive solution for many Basotho.

c. **Availability**

   Limited and unreliable services of mobile money agents, a lack of cash in/cash out merchant services, and float liquidity issues dissuade full adoption of mobile money services, particularly in rural areas.

d. **Affordability**

   Despite the potential to dramatically reduce the costs of transferring money and making payments, mobile money services in Lesotho are relatively expensive. When compared to neighbouring countries like South Africa and Swaziland, costs per transaction can be more than five times as expensive.

A thriving and inclusive mobile money sector requires key stakeholders to play various roles:

- MNOs and FSPs offer value adding services at prices that are affordable and meet the needs of all.
- Merchants, utilities, and government accept mobile money as a valid transaction method.
- Mobile money agents provide cash in/out services reliably in even the most remote locations.
- Consumers are familiar and well educated about mobile money and financial services.
- Government provides a supportive policy and regulatory framework that allows for innovation, healthy competition and protects consumers throughout Lesotho.

2.3 Objectives

The primary objectives for the 2018 Lesotho SIMM Hackathon can be summarized as follows;

- To create a **conveying platform** for young innovators that enables the development of mobile money solutions aimed at advancing financial inclusion.
- To build new, and strengthen existing **networks** that facilitate the continued empowerment of Basotho in designing scalable solutions to key ecosystem challenges.
- To **provide opportunities** for young innovators to access additional skills development, mentoring, partnership and financial support.
- To **mobilize the data community** in Lesotho, promoting collaboration in using data and analytics to solve financial inclusion challenges.

2018 Lesotho SIMM Hackathon:

Competition outline

- The competition was a 3-day, bring your own device event
- Accommodation, meals, workspaces, internet connectivity, stationary, snacks and beverages were provided
- Extensive networks of key stakeholders were invited to attend and contribute to various elements of the Hackathon

Participants

- Entries were open to anyone with an interest/experience in innovation and product development
- Participants could apply as an individual or group
- Spaces in the competition were limited so all applicants were screened for suitability
- Individuals were grouped according to their selected ecosystem challenge

Solution design

- Each team developed a prototype solution to 1 of 7 mobile money ecosystem challenges, representing real-world difficulties for (potential) mobile money users in Lesotho

- All solution design sessions were overseen by mentors and industry experts, providing guidance throughout the development process

Final pitches

- Each team was given 4 minutes to pitch their solution (followed by 2 minutes of judges Q&A)
- Each pitch included: a clear problem statement (SOP), details of the proposed solution, a business plan, a team overview, and a technical demonstration

Judging Criteria

- Level of innovation of the solution and relevance to the market – (30%)
- Sustainability of the solution and ease of integration into the market, scalability, and potential impact for the poor – (30%)
- Feasibility and effectiveness of the proposed solution – (30%)
- Proposed time for completion of the prototype – (10%)

Awards

- Cash prize: $5000 USD for winning teams
- Mentorship and technical support to enable the development of each winning team's prototype
- Certificate of participation for all competitors

Programme highlights

- Day 1
  (08:00-09:00) Arrival, registration and breakfast
  (09:30-09:45) Official launch by the Ministry of Finance
  (10:00-10:45) Presentation of the 7 mobile money challenges
  (11:45-12:30) Ice-breaking and team formation
  (16:00-16:30) Business model canvassing
- Day 2
  (08:30-09:30) Team profile presentations
  (09:30-10:00) Human-centred design session
  (14:00-14:30) Tech development session
  (17:00-17:30) Presentation and pitch training
- Day 3
  (09:00-10:00) Mock pitches and feedback
  (14:00-16:00) Final pitches and prototype demonstration
  (16:30-17:30) Announcement of winners
  (17:30-18:00) Next steps and closing of the Hackathon

3. FINANCIAL INCLUSION CHALLENGES

The Lesotho SIMM Hackathon prioritized six specific ecosystem challenges to be addressed in order to take advantage of the opportunities presented by the mobile money sector. Each team selected one challenge on which to base their solution;

1. **Mobile money- different and long steps for payment**

   Mobile money provides users with financial services that are affordable, reliable and secure. However, the available platforms tend to be inherently complex and unintuitive, particularly for 2G mobile device users.

2. **Locating financial access points in various areas and districts**

   Although financial access points are widely available in urban areas, people in more remote regions are not close to these merchants, and many do not know where their nearest access points are located.

3. **Limited usability of financial services among semi-literate, aged and the visually impaired**

   People are inherently different and people have different needs, but everyone deserves access to financial services. Mobile money solutions must consider semi-literate and people with disabilities.

4. **Management of community group savings and credit programs**

   Informal savings groups are popular in Lesotho. However, mobile money services are costly and do not consider key dynamics in community savings groups. Innovative solutions are required that address; safety, transparency, transaction limitations, and financial record keeping.

5. **Lack of 'know your customer' requirements ***

   Mobile money has advanced the availability of financial services throughout Lesotho, but a lack of regulation creates the potential for misuse. KYC considerations are crucial in addressing numerous user authentication risks, particularly in the prevention of criminal

activities (money laundering/financing of terrorism). Mobile money solutions need to integrate with national registries to help improve user eligibility.

6. **Limited user-friendliness of financial education programs** *

   The promotion of financial literacy is critical to ensure the effective use of financial services. How do we educate Basotho in urban and rural areas to effectively build value around their money?

7. **Other**

   Alternatively, teams were encouraged to focus on challenges they identified within the mobile money sector, provided their solutions target the advancement of financial inclusion.

* Challenge 5 and 6 were not prioritized during the 2018 Lesotho SIMM Hackathon

4. PARTICIPANT OUTLINE AND DEMOGRAPHICS

A total of **62 participants** competed in the Lesotho SIMM Hackathon, consisting of only **5 females** (8%) and **57 males** (92%). Their average age was **26 years old**, with the age distribution as follows; 4% younger than 20, 48% between 20-25, 31% between 26-30, and 16% were older than 30 years.

Regarding education status; 50% of participants had obtained a degree from a tertiary institution, 30% attended college but failed to graduate, 18% achieved a high school diploma or equivalent, and 2% had less than high school level education.

Table I: Lesotho SIMM Hackathon team outline

	Team name	Number of members	Joined as a team (✓/×)	Ecosystem challenge
1.	Smartloti	5	✓	#1
2.	M2L	3	✓	#2
3.	Afrigrid	3	✓	#5
4.	Penta-Tech Solutions	6	✓	#1
5.	Nova	3	✓	#3
6.	Trio	3	✓	#4
7.	InfoCrasp	3	✓	#3
8.	A*	4	✓	#1
9.	Cashflow	5	×	#2
10.	Society Hub	3	✓	#4
11.	Money Bag	2	×	#3
12.	Bundle-Up	4	✓	#2
13.	CodeBlack	3	×	#1
14.	Byte Coders	3	✓	#2
15.	Mo-yeng	4	✓	#7
16.	Technify	4	✓	#1
17.	OPS	4	✓	#3
		62		

The participants organised themselves into a total of **17 teams** based on the 7 ecosystem challenges (Table I), with the average team consisting of **4 members**. It appears the majority of participants entered the competition as a team (14 teams- 82%), however, it is unclear how many individuals joined established teams during the team formation session (due to

similar ecosystem challenges). Three teams reported that their members had no prior involvement in innovation competitions of this nature (17.6%), 12 teams had some members with innovation competition experience (70.6%), and 2 teams indicated that all their members had competed in an innovation competition of some form (11.8%).

The most commonly selected ecosystem challenge was #1 (5 teams-29%), followed by #2 and #3 (4 teams each- 24%), #4 (2 teams- 12%), and finally #5 and #7 (1 team each- 6%). No teams opted to focus on financial education-related solutions (challenge #6).

5. WINNING SOLUTIONS

InfoCrasp

Challenge: #3 (Limited usability of FSs among semi-literate, aged and the visually impaired)
Solution name: IVR System
Team members: Sello Mafantiri, Rats'omo Rats'omo, Tseko Moshe
SOP: The existing mobile money services have limited usability for semi-literate, aged, visually impaired, the poor and people living in rural areas. The statistics provided by UNDP regarding mobile money usage in Lesotho helped form the solution and enhanced the level of analysis.
Solution details: The solution integrates an IVR (interactive voice response) system and voice recognition into existing mobile money system to better cater for semi-literate, aged and the visually impaired, who also need access to finical services.

TRIO

Challenge: #4 (Management of community group savings and credit programs)
Solution name: SESIU
Team members: Mohau Ramakhula, Seboka Matsoso, Mosiuoa Sesing
SOP: Community Financial Groups (CFGs) in rural areas lack the appropriate facilities, resources and tools required for the successful management of sustainable financial services. Thereby, ultimately denying members access to a formal financial Identity as well as the ability to save, borrow, and insure.
Solution details: SESIU is a comprehensive and integrated financial management system with next-generation mobile digital access channels such as a mobile App, USSD, SMS. It leverages open source financial inclusion technology (Mifos), existing mobile money platforms and billing platforms (Smart Bill) to bring access to financial services to less banked population groups.

MoneyBag

Challenge: #3 (Limited usability of FSs among semi-literate, aged and the visually impaired)
Solution name: MoneyBag
Team members: Makhaba Sennane, Teboho Ntilane
SOP: Lesotho has a substantial number of disabled, aged and semi-literate people who do not have access to mobile money or any financial services. Our aim was to create a phone-less mobile money service leveraging on the already established networks of mobile money agents.
Solution details: The solution delivers a simpler and more convenient way to access mobile money services for disabled people and also for people without disability, by providing a platform that can be queried without the user having access to a device.

Cashflow

Challenge: #2 (Locating financial access points in various areas and districts)
Solution name: Cashflow
Team members: Mothusi Kabi, Tokelo Kamohi, Tsekiso Thokoana, Morapeli Thetsane, Motlatsi Lesole
SOP: It is very difficult to locate merchants for mobile and virtual money services, which leads to a large percentage of the country's population being excluded from economic participation.
Solution details: We at Cashflow have taken our solution one step further than just being able to locate the nearest mobile money merchant. By making everyone a merchant there is a greater level of access to financial services for the low income population of the Basotho society.

Technify

Challenge: #1 (Mobile money- different and long steps for payment)
Solution name: ITMAS (Integrated Taxi Management System)
Team members: Thato Rammoko, Pule Molise, Mohale Molieleng, Tlotliso Mafantiri
SOP: To improve public transportation services by enabling mini buses to accept mobile money payments. Data from GSMA (Groupe Spéciale Mobile Association) indicate the average mobile money customer uses $188 per month and 2.3% of that goes to paying merchants.
Solution details: A minibus e-ticket for commuters. This product enables mini-bus operators to bank their daily earnings instead of having to deal with cash.

Bundle-Up

Challenge: #2 (Locating financial access points in various areas and districts)
Solution name: KYC + GPS MM SYSTEM
Team members: Kabelo Ramaboli, Nyakallo Moleko, Tankiso Kolobe, Kabelo Lekhatla
SOP: A lack of KYC requirements and user verification leads to many anonymous and illegal transactions through mobile money platforms. In addition, limited information regarding the location of financial access points places a burden on customers when trying to access financial services.
Solution details: A mobile application that offers location information for all financial service access points, while also preventing anonymous transactions. To solution uses data from FSPs for verification against data from home affairs to validate user information. GPS data is used to locate customers and financial access points, as well as finding distance between the two parties.

NOVA

Challenge:	#3 (Limited usability of FSs among semi-literate, aged and the visually impaired)
Solution name:	Buddy rescue
Team members:	Pule Maanela, Thabo Majoro, Thoola Shai
SOP:	Visually impaired people are unable to effectively use the available mobile money service offerings. Meaning these individuals remain financially excluded.
Solution details:	Buddy Rescue is a mobile application which assists aged, visually impaired and semi-literate people to use mobile money services. The solution was developed using android studio and then tested with a handheld android smartphone. For security purposes, the solution employs a password phrase that a user has to say to minimize system failure and authorized usage.

6. KEY LEARNING OUTCOMES

Based on survey and interview data collected from participants, judges and key contributors to the 2018 Lesotho SIMM Hackathon, the following key learning outcomes were highlighted:

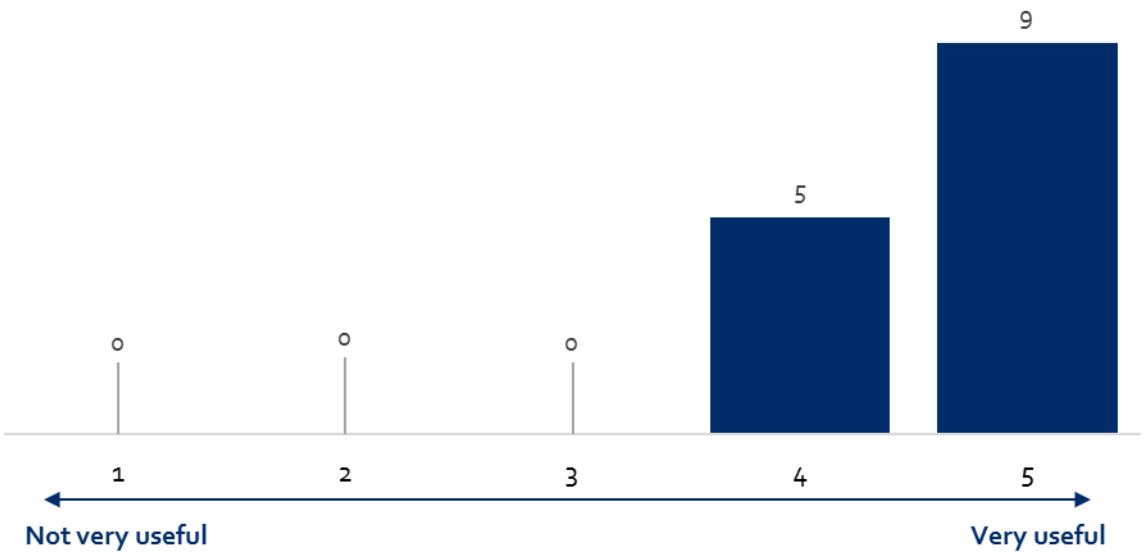
1. Linking innovation and financial inclusion

A key outcome from the Hackathon was to generate interest from young innovators, development partners, FSPs and MNOs, with the common goal of developing solutions for financial inclusion in Lesotho. There appears to be an understanding among these contributors that innovations in the mobile money sector represent a valuable avenue through which to improve access to financial services for low-income and rural Basotho populations.

2. Skills development and mentorship

By engaging with mentors and other key contributors, the experience and exposure the participants received was invaluable in helping them to develop their solutions. As seen in Figure 1, the teams found the learning and mentorship opportunities provided during the Hackathon to be highly beneficial.

Figure 1: How useful was the Hackathon in providing skills development and mentorship?



Source: *2018 Lesotho SIMM Hackathon Participant Feedback Survey (responses limited to 14 teams)*

Guidance and support regarding the development of viable business models (canvassing), project and team management skills, and learning how to pitch were particularly beneficial. Therefore, participants who attended the Hackathon are more equipped to design scalable solutions for financial inclusion, and are better prepared to create and manage a fintech/start-up business.

Q: Please describe 3 valuable skills you learned during the Hackathon…

A: *"Managing diverse members of a team, contextual thinking, evaluating marketable ideas"*

→ **Smartloti**

A: *"Prototype design, presentation skills, business model formation"*

→ **InfoCrasp**

A: *"Team work is important to solve real life problems, understand the problem before attempting to solve it, mitigate the risks that may arise from the solution"*

→ **Bundle-Up**

A: *"Team work, business model design, presentation skills"*

→ **Afrigrid**

3. Partnership, networking and collaboration opportunities

One of the main objectives of the Hackathon was to encourage partnership and networking opportunities among the participants and various stakeholders. This was achieved by leveraging the interests and skills of all involved, thereby developing active and impactful networks that promote the advancement of financial inclusion through data use. By connecting young innovators with FSPs, MNOs and development partners, they were able to design prototype solutions to real-world challenges within the mobile money sector.

Q: Please describe 3 meaningful connections you made during the Hackathon…

A: *"High level executives, incubators, mentors"*

→ **Cashflow**

A: *"The mentors: Todd from MEST, Petronella and Dumi from FinMark Trust"*

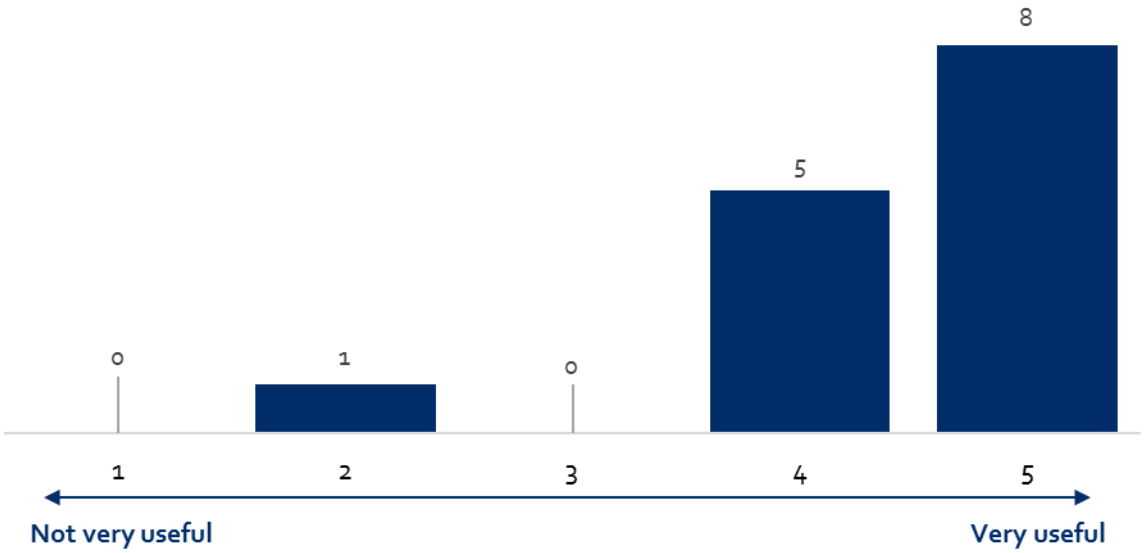
→ **Byte Coders**

A: *"MEST, FSPs, MNOs"*

→ **InfoCrasp**

Demonstrated in Figure 2, it is clear that the majority of teams found great value in the networking opportunities provided during the Lesotho SIMM Hackathon (*Note: the team that rated the Hackathon networking opportunities poorly did not provide an explanation*). Ultimately, the event created valuable partnerships which helped facilitate the development of the winning teams' solutions. Moreover, the connections forged during the Hackathon are useful for individuals aiming to design solutions in the future.

Figure 2: How useful was the Hackathon in providing partnership and collaboration opportunities?



Source: *2018 Lesotho SIMM Hackathon Participant Feedback Survey (responses limited to 14 teams)*

Q: Do you have any suggestions for how the Hackathon could be improved?

A:

- "The competition duration should be longer than 3 days"
- "Laptops should be provided for competitors who do not have their own devices"
- "Provide clearer application/solution specifications for better final products"
- "Invite marketers and stakeholders to be part of the teams to enhance the usability of the designed solutions"
- "The challenges were limiting as they all focussed on the mobile money sector"
- "Provision of more refreshments"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