FMT
FINMARK TRUST
Making financial markets work for the poor

Hackathon: Innovations for Mobile Financial Services

(OneMoney Hackathon)

Harare, Zimbabwe

July 13-15, 2018

The OneMoney Hackathon is a product of the partnership between FinMark Trust, NetOne, TelOne, Elevate Trust and ZimHack.

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1. EXECUTIVE SUMMARY

The OneMoney Hackathon was held at the TelOne Centre for Learning from the 13th-15th July 2018, a product of the partnership between FinMark Trust, NetOne, TelOne, Elevate Trust and ZimHack. The competition aimed to promote product innovations for inclusive financial services within the mobile financial services sector, with a particular focus on poor and rural populations of Zimbabwe. The event provided a platform to engage young innovators from across the country to develop innovative and modern solutions to mobile money ecosystem challenges, while interacting with mentors and key stakeholders.

Over the 3 days, 16 teams (107 participants) developed prototype solutions to 1 of 5 mobile money ecosystem challenges. Judged on a range of fundamental criteria, the 5 winning teams each received a cash prize of $5000 USD, as well as continued mentorship and technical support towards the development of their solutions.

What is a Hackathon?

A competition during which computer programmers and other tech-savvy individuals collaborate intensively to innovate and design solutions to a problem using technology. Typically lasting several days, the goal of a Hackathon is to develop usable prototypes that offer innovation through novel product design or by improving existing product/services. Each team then presents their solution to a panel of judges who evaluate the product innovation. Prizes are awarded to the team that develops the best solution to a particular industry problem.

2. Background, rationale and objectives

2.1 Background & Rationale

There is consensus among key stakeholders driving the financial inclusion agenda in Zimbabwe that broadening access to and usage of financial services stimulates financial savings and investment. This will have a substantial positive impact on people's lives through the reduction of poverty and inequalities, and promotion of economic growth, while mitigating systemic risk and maintaining financial stability. The adoption of inclusive business models further enhance the impact financial service providers can have on financial inclusion. Notwithstanding the progress made to date in the pursuit of an inclusive financial sector in Zimbabwe, gaps still exist in the level of access to, usage and quality of financial products/services, as well as the impact on the lives of the consumers. Such gaps are particularly evident among Micro, Small and Medium Enterprises (MSMEs), women, youth, and rural populations.

"Inclusive businesses include low-income people on the demand side as customers, and on the supply side as employees, producers and entrepreneurs serving at various points within the value chain. They build bridges between business and the poor for mutual benefit, extending the benefits of growth directly to low-income communities. Inclusive businesses create a strong foundation for profit and long-term growth by bringing previously excluded people into the marketplace."

The introduction of digital payment systems leveraging on ICT has increased access to finance for previously unbanked and underserved Zimbabweans. The mobile money sector presents a number of opportunities to further extend valuable financial services, particularly as mobile device penetration is high throughout Zimbabwe (more than 100%). Areas that can be exploited include; expansion of the mobile money ecosystem to be inclusive of rural and low-income populations, targeting customer and population groups such as women and youth, and the development of products/services to improve mobile money uptake.

This can be achieved by; **(1)** Strengthening leadership, coordination and institutional frameworks for expanded mobile financial services in Zimbabwe, **(2)** Encouraging access and adoption of mobile money for personal, business and government transactions to enhance use especially among the population in the bottom of the pyramid, **(3)** Supporting knowledge and research within the sector for advocacy, innovations and product diversification.

A thriving and inclusive mobile money sector requires:
- 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.

The OneMoney Hackathon was held at the TelOne Centre for Learning from the 13th-15nd July 2018. The competition aimed to promote innovative and data-driven product design that facilitates the use and access to mobile financial services, especially for individuals at the base of the economic pyramid and among rural populations. The Hackathon provided a platform to engage young innovators from across the country to develop innovative and modern solutions to challenges and bottlenecks within the mobile financial services sector. The products and services developed during the 3-day event were expected to address the financial needs of low income and rural communities in Zimbabwe

2.2 Objectives

The competition was open to young innovators, technologists, software engineers, data analysts, and mobile application developers who wished to challenge themselves to design and develop innovative products/services for increased use and access to valuable financial services. The Hackathon was expected to result in the design of at least 5 prototype solutions.

The OneMoney Hackathon set out to achieve the following key objectives;

- Design and develop next-generation applications that improve on existing Mobile Money systems and digital product offerings
- Connect technology with people in order to bridge the financial inclusion divide in Zimbabwe
- Create technological solutions that are built specifically for Zimbabwean context, which solve local financial inclusion challenges
- Leverage existing information, networks and human capacity to build innovations and solutions to financial inclusion challenges.

OneMoney Hackathon:

Competition outline

- The hackathon was a 3-day, bring your own device event
- Meals, workspaces, internet connectivity, stationary, snacks and beverages were provided
- Accommodation was provided for participants traveling from outside of Harare
- Extensive networks of stakeholders and mentors were invited to attend and contribute to various elements of the Hackathon

Contributing partners

- FinMark Trust
- NetOne
- TelOne
- Elevate Trust
- ZimHack

Participants

- Entries were open to anyone with an interest in innovative product design and development
- Participants could apply as an individual or group
- Individuals formed teams based to their selected mobile money challenge, ensuring a diverse team skill set

Solution design

- Each team developed a prototype solution to 1 of 5 mobile money challenges, representing opportunities for innovative product design within the mobile money sector in Zimbabwe

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

Final pitches

- Each team was given 5 minutes to pitch their solution (followed by 2 minutes of 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

- Problem statement and solution design – (30%)
- Mobile money compatibility and integration – (30%)
- Financial inclusion impact, scalability and viability of prototype – (30%)
- Team composition – (10%)

Judges

- George Tairoodza (Elevate Trust)
- Sternford Gapu (TelOne)
- Tauya Mugwagwa (NetOne)
- Mildret Kujinga (NetOne)
- Robert Jones (FMT)
- Eng. Talon Garikayi (HIT Technology Transfer)

Awards

- Cash prize: $5000 USD for each of the 5 winning teams
- Mentorship and technical support towards the development of the winning prototypes
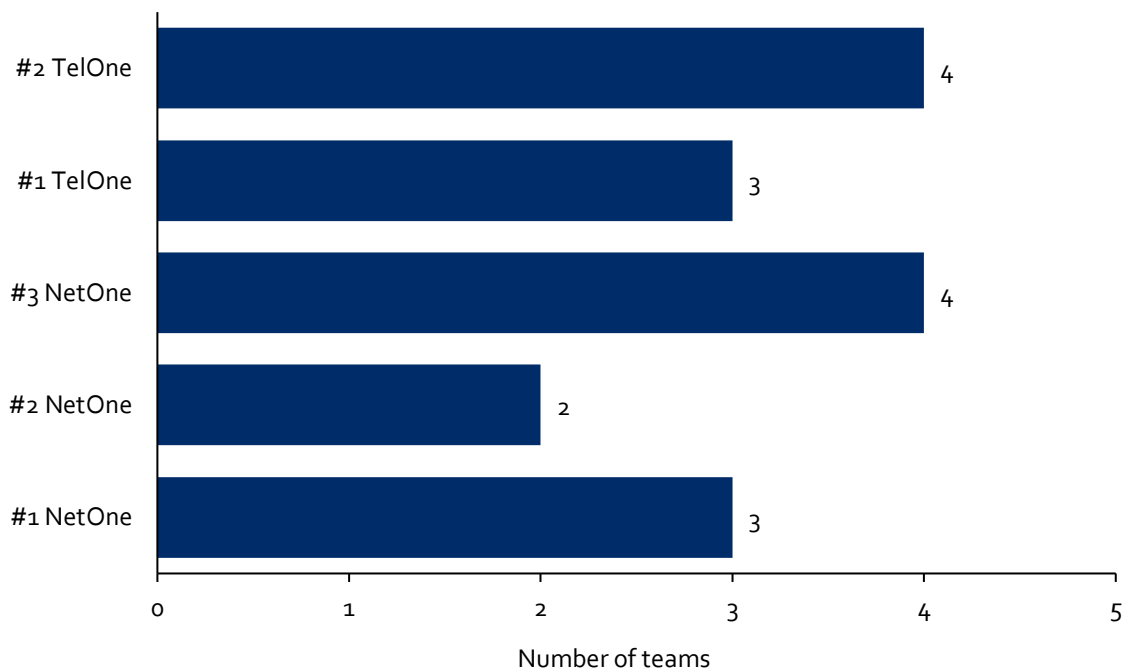
OneMoney Hackathon Programme

- See annexure

3. MOBILE MONEY CHALLENGES

The OneMoney Hackathon prioritized five challenges to be addressed in order to take advantage of the opportunities presented by the mobile money sector. NetOne provided two challenges which focussed on innovation around their mobile money service offering (OneMoney). TelOne offered two challenges which required the development of online platforms. Each team selected one challenge on which to base their solution (The distribution of challenges selected by the teams can be seen in Figure 1):

1. NetOne: Innovate and develop a loan aggregation system

2. NetOne: Innovate and develop an insurance aggregation system

3. NetOne: Mobile money adoption is at 30-40%, develop a solution to increase mobile money usage

4. TelOne: Develop an e-commerce platform for informal SMME

5. TelOne: Create an e-learning marketplace where learners can access content from various learning content providers

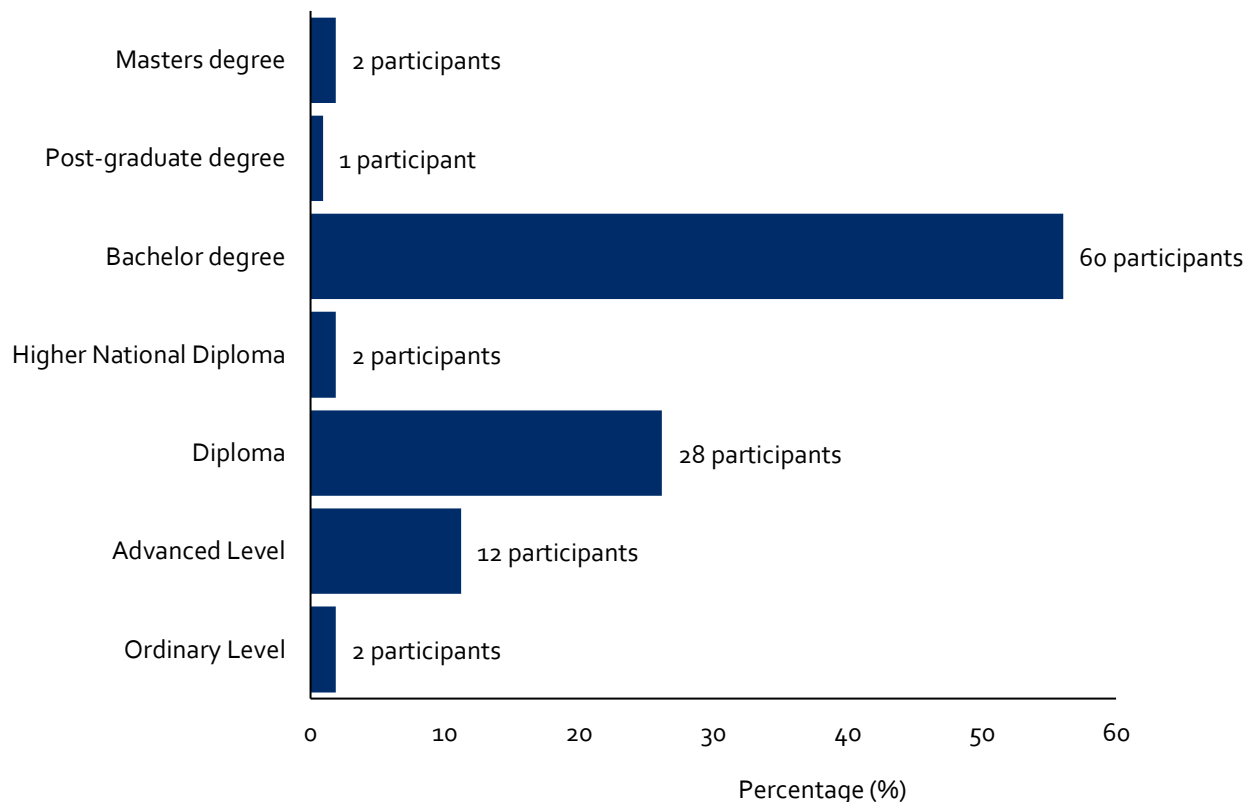Figure 1: Distribution of challenges selected by the OneMoney Hackathon teams

4. PARTICIPANT OUTLINE AND DEMOGRAPHICS

A total **107 participants** competed in the OneMoney Hackathon, consisting of only **6 females** (6%) and **101 males** (94%). The average age of the participants was **25 years old**, with the age distribution as follows; 6% younger than 20, 60% between 20-25, 19% between 26-30, and 16% were older than 30 years.

The education status of the participants is displayed in Figure 2, where the majority of individuals had achieved a **bachelor's degree (56%)**. The area of study showed a diverse range of educational backgrounds; 21.5% Engineering, 20.56% Compute Science, 10.28% Telecommunications, 7.48% Information Technology, 3.74% Information Systems, 3.74% Information Security and Assurance, 2.8% Mathematics, 1.87% Software Development, 1.87% Commerce.

Figure 2: Education status of OneMoney Hackathon participants

The majority of participants had no prior involvement in innovation competitions of this nature (**61 participants - 57.6%**), although a number of individuals expressed previous involvement in the following; 23 had previously competed in a Hackathon (21.5%), 8 had been involved with an incubator (7.48%), 12 had attended a boot camp (11.21%), and 21 had competed in innovation competition of some form (19.63%).

The participants organised themselves into a total of **16 teams** based on the 5 financial inclusion challenges (Table I), with the average team consisting of **6 members**. All teams competing in the Hackathon were formed during the competition, as no established start-up companies applied for the event.

Table I: OneMoney Hackathon team outline

	Team name	Number of members	Joined as a team (✓/✗)	Mobile money challenge
1.	Kamifa	5	✗	#4
2.	GameChangers	7	✗	#4
3.	Team Java	5	✗	#1
4.	OneTeam	7	✗	#2
5.	UNO X	4	✗	#1
6.	Linux	6	✗	#2
7.	UFO	8	✗	#3
8.	Vanhu Vamwe	7	✗	#3
9.	E-Corp	5	✗	#1
10.	The Pandas	6	✗	#3
11.	Social Change	8	✗	#5
12.	Hokoyo	8	✗	#1
13.	Team Nhimbe	6	✗	#1
14.	PowerRangers	7	✗	#5
15.	ShiftOneMoney	6	✗	#3
16.	Techbuddies	7	✗	#5

5. WINNING SOLUTIONS

Challenge 1: Loan aggregator

Team name: Hokoyo

Solution name: OneWealth

Team members: Isaac Chikutukutu, Joshua Mutara, Tinashe Zikatih, Gwinyai Chakonda, Takudzwa Chapoloza, Kudana Gwatidzo, Calvin Rupango, Mthabisi Ncube

SOP: The current methods that are being used by Micro Financiers to assess SMME creditworthiness are long and costly due to high risk of default, thereby marginalizing the informal sector.

Solution details: We have developed a loan aggregation platform, OneWealth, that uses artificial intelligence to calculate a credit score based on a user's mobile money transaction history.

Challenge 2: Insurance aggregator

Team name: OneTeam

Solution name: KaOneInsure

Team members: Mzingaye Ndhlovu, Kgosietsile Ncube, Edwin Muvandi, Charles Chimhande, Zibusiso Ndhlovu, Nigel Nyathi, Larry Jawi

SOP: There is no intelligent system that aggregates insurance services that runs on mobile platforms.

Solution details: The system clusters together companies that offer insurance services. It allows customers to pick what they want to insure, for example, funeral cover, car insurance, medical insurance etc. The customers then provide data for evaluation, for example, for car insurance: year, model and make of car. The system gives various prices based on the evaluation algorithm. The algorithm analyses the data given by the user, identifies the most suitable package from each service provider (for that particular insurance), then displays options (quotations) for the user to choose. The user then chooses the quotation/policy that they want and pays using OneMoney. The system offers options for reminders, automated payments and prompted payments as a way to have a continuous loop of Onemoney transactions.

Challenge 3: Mobile money adoption

Team name: ShiftOneMoney

Solution name: Scan2Pay

Team members: Clive Nyapokoto, Humphrey Mweta, Samson Nota, Marshall Chabanga, Fortune Chidzikwe, Tamuka Chikanyairo

SOP: Mobile money users endure long queues and delays to pay for their groceries in supermarkets.

Solution details: We have developed a transactional OneMoney mobile application that allows customers to shop in a supermarket without waiting at the till point to pay. The customer scans the product QR code at the shelf, the total bill is reflected on the mobile phone. To pay, the customer goes to a point in the shop where there is a merchant OneMoney QR code which when scanned will prompt the customer to enter his One Money pin number and the payment is processed, generating a list which the security at the door will use to verify the groceries bought.

Challenge 4: SMME e-commerce platform

Team name: Kamifa
Solution name: OneTrade
Team members: Tinashe Kadiki, Rutendo Mudoti, Midia Nzvenga, Roy Kanavheti, Tafadzwa Nyoni
SOP: There are a number of challenges facing informal traders throughout Zimbabwe: There are unregistered vendors who steal from customers. Markets are over-populated and very congested which is not easily accessible. There are too many people selling the same product, hence prices may not be easy to compare.
Solution details: The solution being developed is OneTrade application were the buyer and seller can communicate on the platform. OneTrade is linked to the OneMoney wallet and other bank accounts. A buyer is able to link to the seller and the transporter for the goods being sold to be delivered. The administrator first verifies if the goods and the seller are authentic so as to afford fraud.

Challenge 5: E-learning marketplace

Team name: PowerRangers
Solution name: Nhaka E-learning
Team members: Rutendo Nyaruwata, Adam Mari, Anele Siwawa, Walter Ngwenya, Nathan Nyabvure, Tsitsi Musokeri, Funani Ndou
SOP: Our team created an e-Learning marketplace where learners can access content from various learning content providers. Nhaka E-learning leverages technology for advancements in the delivery of education of disadvantaged communities throughout Zimbabwe.
Solution details: Nhaka E-learning is an e-Learning platform that allows for users to access a range of educational content the passing on and learning of practical skills that is either practical or vocational. The platform also caters for disabled persons in society. There is no limit to the content providers in our marketplace.
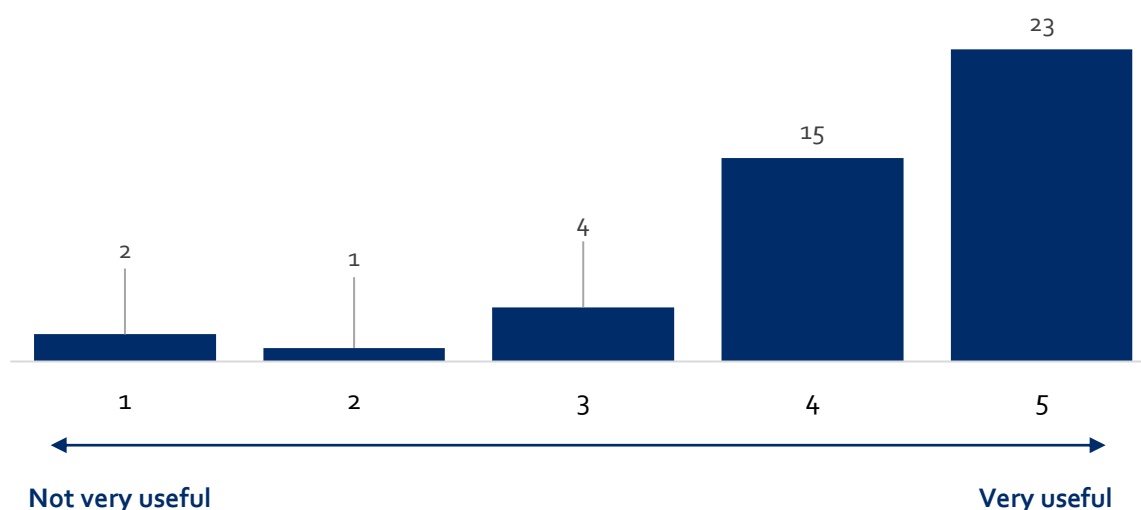
6. KEY LEARNING OUTCOMES

Based on survey data collected from OneMoney Hackathon participants, the following key learning outcomes were identified:

1. Skills development and mentorship

The OneMoney Hackathon teams found the learning and mentorship opportunities provided during the Hackathon to be highly valuable (Figure 3). By engaging with the mentors and mobile money experts throughout the competition, the exposure the participants received helped them to develop their solutions as well as their own skills. On average, the participants rated the skills and mentorship opportunities offered during the event as **4.24 out of 5**. The skills development modules provided during the event included; (1) Human-centred design – Eng. Talon Garikayi (Harare Institute of Technology), (2) Data science masterclass – Richard Chamboko (ZimHack), (3) Business model canvassing – Sicelo Dube (Elevate Trust).

Figure 3: How useful was the Hackathon in providing skills development and mentorship?

Not very useful   **Very useful**

Source: *OneMoney Hackathon Participant Feedback Survey (responses limited to 45 participants)*

> **Q: Please describe 3 valuable skills you learned during the OneMoney Hackathon...**
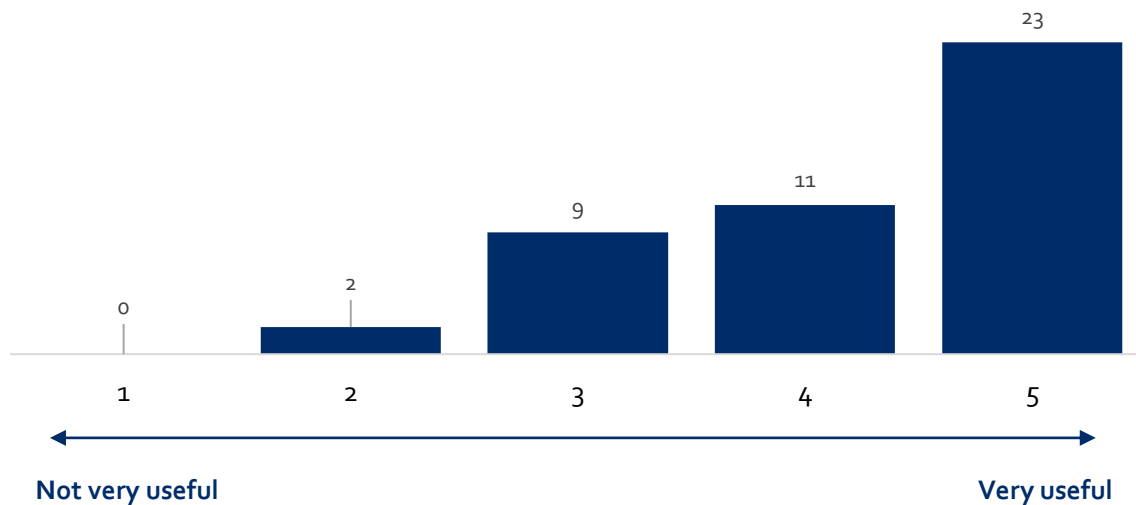> *A: "Entrepreneurial skills, teamwork, software development"* ➔ *Team Nhimbe*
> *A: "Elevator pitch skills, human-centred design, the importance of financial inclusion"* ➔ *OneTeam*

2. Networking and collaboration

As illustrated in Figure 4, the majority of participants found great value in the networking opportunities provided during the Hackathon (rated an average of **4.11 out of 5**). Ultimately, the event fostered partnerships which helped facilitate the development of each teams' solution. We expect the networks created during the event to continue to benefit the teams as they develop similar products and services in the future.

Figure 4: How useful was the Hackathon in providing partnership and collaboration opportunities?

Source: OneMoney Hackathon Participant Feedback Survey (responses limited to 45 participants)

3. Event marketing

The most effective event marketing methods are displayed in Figure 5. The majority of participants were exposed to the event via social media **(total= 34% - 36 individuals)**; 11.76% Facebook, 7.48% Twitter, although 8.41% did not specify which social media platform was used. Word of mouth also appeared to be an effective means of spreading awareness about the OneMoney Hackathon **(friend: 15% - 16 individuals, WhatsApp: 11% - 12 individuals)**. The TechZim website (www.techzim.co.zw), an online information technology and business publication, was also an effective means of reaching participants **(13 individuals – 12%)**. Traditional media were also cited as a worthwhile event promotion strategy **(newspaper: 11 individuals – 10%)**.

Figure 5: How did you hear about the OneMoney Hackathon?

Source: OneMoney Hackathon Participant Registration Form (107 participants- top 5 responses)

4. Event improvement feedback

The following were highlighted by the participants as areas where future Hackathon events could be improved, thereby enhancing skills development, networking and collaboration, and ultimately the standard of the solutions developed;

- *Frequency* - "These events should happen on a quarterly basis to keep the innovators working together more frequently and to create strong networks"
- *Accommodation* - "Accommodation should be provided for all participants so we can concentrate more time on solution development and enjoy late night teamwork"
- *Communications* - "More post-event communication about the next steps"
- *Incentives* - "More incentives for competing teams"
- *Content* - "Fewer lectures/presentations to allow more time to develop solutions"
- *Judging* - "Rank the non-winning teams in each category to improve motivation for future events"
- *Content* - "Provide relevant APIs and data sets"
- *Judging* - "Increase the presentation time and the judges should concentrate more on the solution rather than presentation skills"
- *Duration* - "The competition should run for longer- maybe a week"
- *Accommodation* - "The competition venue and accommodation should be in the same place"
- *Content* - "Provide more training on business and entrepreneurial skills"
- *Judging* - "Recruit technical judges to determine the feasibility of each solution"

7. ANNEXURES

Day 1 (Friday- 13 July)	
OFFICIAL LAUNCH BREAKFAST	
8.00 - 9:00	Arrival, registration & breakfast
9:00 - 9:10	Welcome remarks
9:10 - 9:30	Financial inclusion update
9:30 - 9:45	Objectives of the OneMoney Hackathon
9.45 - 10:00	Keynote address
10:00 - 10:30	Status of mobile money, infrastructure and innovation opportunities
10.30 - 10:45	Questions and answer session
10:45 - 11:00	Closing remarks
START OF HACKATHON	
12:00 - 12:30	Introduction to the Hackathon & presentation of challenges
12:30 - 13:00	Questions and answer session
Lunch	
14:00 - 14:30	Team formation
14:30 - 15:45	Team announcements
Refreshments	
16:00 - 16:30	Selection of mobile money challenges
16:30 - 17:00	Introduction to mobile money
17:00 - 17:45	Business model canvassing
17:45 - 19:00	Solution planning and design
Dinner	

Day 2 (Saturday 14 July)	
Breakfast	
8:30 - 9:30	Team profile presentations
9:30 - 10:00	Human-centred design session
Refreshments	
10:30 - 12:30	Solution design/Hackathon
Lunch	
13:30 - 14:00	Financial inclusion session
14:00 - 15:30	Solution design/Hackathon
Refreshments	
16:00 - 17:00	Data science masterclass session
17:00 - 18:00	Solution design/Hackathon
18:00 - 19:00	Presentation and pitch training
Dinner	

Day 3 (Sunday 15 July)	
Breakfast	
8:30 - 10:00	Solution design & presentation preperation
10:00 - 13:00	Final pitches
Lunch	
14:30 - 15:00	Announcement of Winners
15:00 - 15:30	Next steps and closing of the event
END OF HACKATHON	