



TEAM 4

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M-Power: The Tracking of Menstrual Cups

ABSTRACT

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Business Case & Project Outcomes

Introduction & Background

M-power is a Public Benefit Organisation (PBO) that was started in 2008 by Glenda Tutt. Glenda manufactured menstrual cups (M-cups) locally and built the business over 14 years based on her teaching qualification and passion for education as well as her passion to empower women/girls while keeping them in work/school. Glenda is now the executive director of M-Power as well as the project sponsor.

M-power strives to promote and improve menstrual health management in low-income settings while encouraging young women and girls to not be inhibited in a work/school environment due to their menstrual cycle. While promoting menstrual health M-Power is also striving to lower the environmental impact of menstrual product waste/dumping.

Business Objectives

1. Empowerment: Empowering women by encouraging women/girls to stay in work/school during their menstrual cycle through the providing of M-cups as well as teaching them about M-Cups.
2. Inclusivity: Providing M-Cups and M-Cup education to all who require it, specifically focusing on under-developed areas.
3. Environmental/sustainability: Lowering the environmental impact of menstrual product waste by using M-cups.
4. Cost effective: Producing and providing M-Cups in both cost-effective ways and for cost-effective prices.

Problem Definition

Business Need

M-power need an easier way to track the usage of the distributed menstrual cups.

Users

Currently, menstrual cups (m-cups) are distributed to female students in under privileged communities and the usage is tracked through older students (mentors).

Context

The mentors fill out forms with information that they gather from the younger students in their group and then go on to share the information with the organization via WhatsApp. The current way of operating is time-consuming, tedious, and leaves room for errors amongst other things.

Insights

Users feel that using M-cups are not preferable in comparison to pads and tampons and discussing M-cups (as well as menstruation and menstrual products as a whole) is considered a taboo therefore users are reluctant to use the product. Users need a space to communicate with each other on the topic and need support with the product. Users are diverse, and the solution must accommodate languages. Users would appreciate being able to view unbiased reviews on the product before using it themselves. The business aims to eventually expand into distributed commerce and have community ambassadors sell M-cups to women of all ages.

Assumptions & Constraints

Assumptions:

- There will be no personnel costs as the project team consists of students.
- There will not be any personnel (project team) changes.
- The scope, as well as the problem statement, will not change throughout the project.
- All mentors have phones to relay feedback regarding usage.

Constraints:

1. Product Constraints:

- The lack of access to data for m-cup recipients to use the app/website.
- Users of the app/website may not be technologically literate and may require assistance or training.
- Diverse market of South Africa, especially in terms of language will limit the product's usability nationally.

2. Project Constraints:

- Time available for project may decrease the scope.
- Project stakeholder is often busy and thus takes a while to reply.
- Covid regulations limit movement and subsequently the capability to do interviews.

Stakeholder Analysis (External)

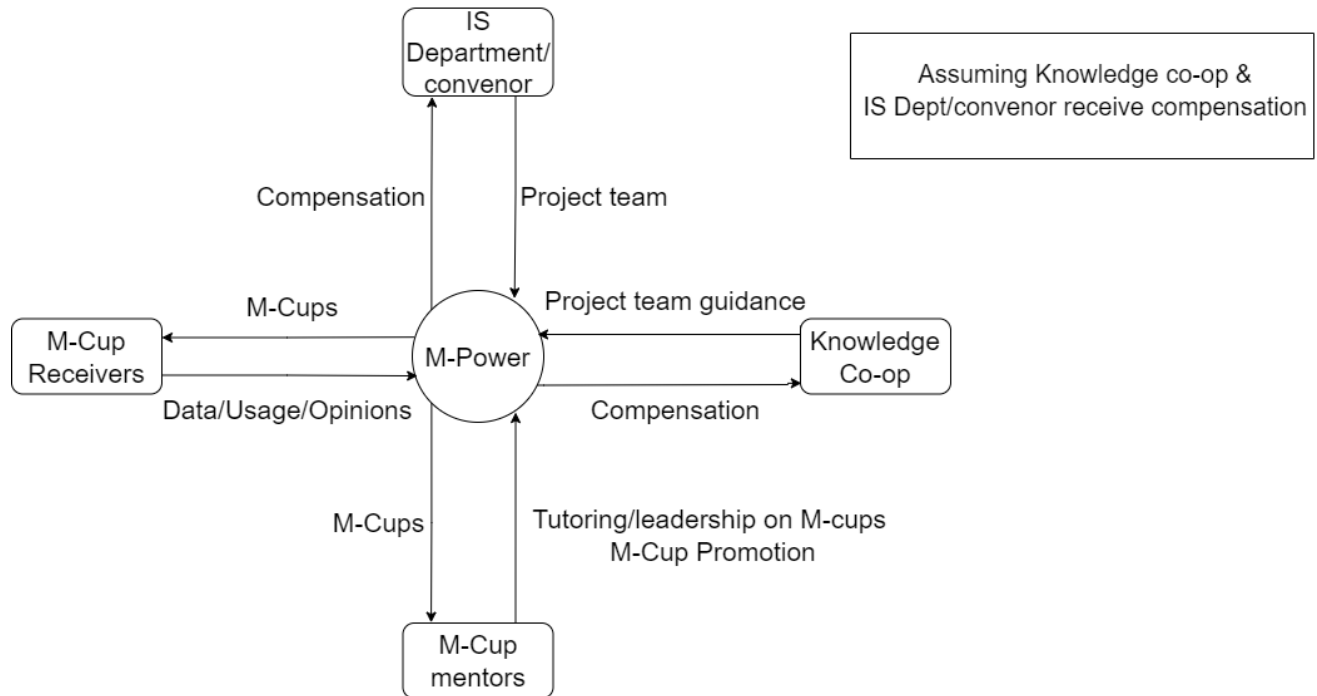


Figure 1: Picture of the External Stakeholder Analysis Diagram

Figure 1 illustrates the different relationships between stakeholders and the focus business (M-Power). Assuming that the IS department/convenor and Knowledge Co-op receive compensation in return for providing a project team and project team guidance, respectively. M-Cup mentors will receive M-cups and will provide Tutoring/Leadership on M-cups as well as M-Cup promotion. Finally, the M-cup receivers (students) will provide overall data, usage data and their individual opinions and feedback.

Project Stakeholders:

Keep Satisfied	Key Players	Keep Informed	Minimal Effort
Glenda Tutt	Glenda Tutt	Gwamaka Mwalemba	Recipients of M-cups
Tiamo (From m-power)	Prince Qwaka	Rethabile Modise	

Table 1: List of categorized project stakeholders

The above table lists the stakeholders according to levels of importance (based on their needs in the project)

Proposed Solutions/Ideas

Solution 1: Create an app – used by everyone

Approach:

1. Prototype app ideas using Flutter or Figma (prototyping tool)
2. Develop an app
 - a. Using: Java/Kotlin (preferred for Android app development) and Native Android Framework.
 - b. Average cost: **R20 000 to R100 000 (depending on complexity, extra features, databases etc)**
3. Add necessary functionality:
 - a. Users share feedback and experiences regarding the M-cup.
 - b. Track the usage of the M-cup (through a daily form on the app).
4. Create a database to store member/user data (usage) as well as feedback.
5. Compile reports based off data collected – usage, feedback, etc.
6. Present reports.

Advantages	Disadvantages
<ul style="list-style-type: none"> • Recipients will be able to complete daily surveys regarding the usage of the cup. • All data can be saved to a database. • Users can interact with one another through a forum. 	<ul style="list-style-type: none"> • Requires maintenance but the business does not have an IT (Information Technology) department (as stated in the brief). • This is not the most feasible solution. • App may use a lot of data.

Table 2: Advantages and disadvantages of Solution 1

Solution 2: Create a website

Approach:

1. Determine what information needs to be displayed and how it will be displayed.
2. Browse complimentary templates on website builders (such as Wix).
3. WIX premium plan must be purchased - **\$12.50 p/m = R 184.13** (subject to change).
4. Create a website (using template).
5. Add functionality:
 - a. Users submit a form sharing their feedback and experience using an m-cup.
 - b. Users may also interact with a public forum.
6. Purchase, register, and connect a (.za) domain to the site developed in WIX – prices range from **R89 to R195**.
7. User feedback and information to be stored on a database.
8. Summarized user information can be shown on the website.
9. Reports regarding user information is compiled and presented.

Advantages	Disadvantages
<ul style="list-style-type: none"> • Website is created and managed on Wix. • Users can connect with one another via the forum function on the site. • Users can create an account and complete daily surveys. • This solution is more feasible than solution one. 	<ul style="list-style-type: none"> • Need to know how to utilize design tools on Wix. • Website interfaces must be modified to fit all mobile devices. • May consume more data than app.

Table 2: Advantages and disadvantages of Solution 2

Solution 3: Online Survey Tool

Approach:

1. Decide which survey tool to use (SurveyMonkey, SurveyPlanet, Google forms). Most tools have adequate free options.
2. Plan what kind of questions will be in the survey. (The use of open/closed questions, multiple choice questions etc.)
3. Input the questions to make the survey.
4. Export responses to analyse in another application. (E.g., Excel)
5. Create summarized information from user responses.
6. Compile and present reports.

Advantages	Disadvantages
<ul style="list-style-type: none"> • Free of charge. • This solution does not require IT personnel to maintain it. • Interface does not need to be modified to fit a variety of devices to fit all devices. 	<ul style="list-style-type: none"> • Lacking other features that the other two solutions have. • Certain knowledge required to create useful information in external applications such as Excel.

Table 3: Advantages and disadvantages of Solution 3

Final Solution: Chatbot

Our selected solution is none of our previously proposed ideas. When we completed our iteration 1 presentation to our sponsor, we all discussed which solution should be chosen and implemented. We talked about Mpower’s current process of collecting information, in which they conduct their information gathering in real life and with some online survey operations on WhatsApp (with the use of groups). Although our sponsor liked some of our proposed solutions and expressed how they could be useful in the future, we concluded that a smaller change in business operations would be most feasible for right now.

We had thought about and mentioned the idea of a WhatsApp chatbot, however we did not include it in our previous documentation. A WhatsApp chatbot is an automated software that has a set of replies that simulates a real conversation on the WhatsApp platform. A WhatsApp chatbot would allow for the registration of new users, survey functions, and other enquiries to all be automated.

Selected Solution: WhatsApp chatbot

Approach:

1. Decide on which third party software to use to create the chatbot (E.g., ChatCompose).
2. Purchase subscription fee **R190/month** or approximately **R1480/year**.
3. Add functionality
 - a. Add registration function (Logs the users full name)
 - b. Add numbered list of different operations
 - i. Log use of menstrual cup
 - ii. Make an enquiry about a menstrual cup
 - iii. More information
4. Complete chatbot.
5. Integrate the chatbot framework onto WhatsApp.
6. The relevant personnel will answer enquiries not covered by automated responses and update weekly logs or other functions.
7. Create reports from recorded statistics from the WhatsApp chatbot.

Advantages	Disadvantages
<ul style="list-style-type: none"> • Does not change the business operations too drastically. • Automates a lot of the initially manual business functions. • Same experience provided to every user; thus, data can more easily be processed. 	<ul style="list-style-type: none"> • Costs in accessing full functionality of the chatbot. • Costs of outsourcing a chatbot developer if outsourcing is required.

Table 4: Advantages and disadvantages for final solution

Project Planning & Implementations

Project Objectives

1. Develop a platform where girls can review the m-cups and encourage others to use it.
2. The platform should also allow girls (of all ages) to share their menstrual/m-cup experiences and offer advice to those in need.
3. Reliably track M-Cup recipients' opinions, usage details and promotion of M-Cups.
4. To implement a distributed ecommerce system.

Final Solution

API – ChatCompose

According to <https://influencermarketinghub.com/whatsapp-chatbot-tools/> ChatCompose is the cheapest framework on the market. Has all the tools necessary to satisfy the solution. ChatCompose helps you build your own sales and support chatbot, design sales and conversation scripts, and deploy chatbots across your communication channels to generate qualified leads and automate customer support. At this stage, it will be used for m-cup usage tracking and customer support. The framework allows for integration into WhatsApp. Backed up with Artificial Intelligence and Natural Language Processing technologies, the chatbots make robust inferences about what users really mean to minimize input error from inadept users.

Feasibility and Price:

Chatbot boasts a low subscription fee of approximately R190/month and approximately R1480/year. Since chatbots require little developer maintenance, a developer will only be needed in the initial start-up and integration of the system, and the once again when any bugs occur. Provided that ChatCompose is an online drag and drop API, bugs should not appear often unless drastic changes are made by authorized users. Security is also inherent to the API therefore that is no issue. A chatbot developer can be sourced for as little as R315/hour. This rate is highly competitive as this job can easily be outsourced and done remotely to anyone in the world with the certifications. Persons as such can be found on: <https://www.upwork.com/hire/chatbot-developers/>. Assuming an average 2 average working days of 8 hours, will be needed for the bot start up, the costs will be as follows:

- R5040 initial investment
- R1480/year (best choice)

ChatCompose also provides a 2-week free, although payment must be made before integrating the bot into WhatsApp.

Managing the bot:

The current system involves the school m-cup ambassador or Tiamo managing the WhatsApp group chats, this person will now have parts of their job automated and will work with the API to fulfil that same role. The relevant person will oversee: Answering enquiries, generating reports from the needed statistics recorded on the web page, updating the weekly log questions and other processes. The training for this is provided as tutorials on ChatCompose.

Prototype and Testing PDF:

<https://drive.google.com/file/d/1jgIUoMSsge9CsNt2Gmujyvn8iMO9jbyY/view?usp=sharing>

Figure 6: PDF document containing the WhatsApp chat-bot prototype screenshots

Challenges and Limitations

Limitations:

- Costs involved in accessing a fully functional chat bot.
- The team was limited where testing is concerned because the prototype is not a fully functional chatbot.

Challenges

- A chatbot has a plain design; thus, the team struggled to practice creativity and make the prototype look unique.
- Prototyping the chatbot in another language due to the large number of national languages in South Africa was not an easy task and therefore the prototyping was conducted in English only.
- The designer of the prototype needed to use another phone to message themselves in order to simulate how the chatbot would function.