

TEAM NEWWAVE UCT INF3011F

June 2021

# PROJECT REPORT

**HOME FROM HOME**

STATS COLLECTION & REPORTING SYSTEM



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The UCT Knowledge Co-op facilitated this collaborative project  
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# ABOUT HOME FROM HOME



## OUR PROJECT SPONSOR'S STORY

Home from Home is a cluster foster care scheme registered with the Department of Social Development (DSD). For over a decade, Home from Home has successfully provided supported and supervised foster care to our society's most vulnerable children. The DSD funds the social work positions at Home from Home which means that service delivery contracts are signed annually stipulating outcomes or targets the organization needs to reach. Subsequently, social workers are required to submit monthly stats aligned to these outcomes which then gets reported by the Program Manager on a quarterly basis. Reporting this information is mandatory to ensure continued funding and registration with the DSD.

# PROBLEM DEFINITION

## The Current (As-Is) Use Case Diagram

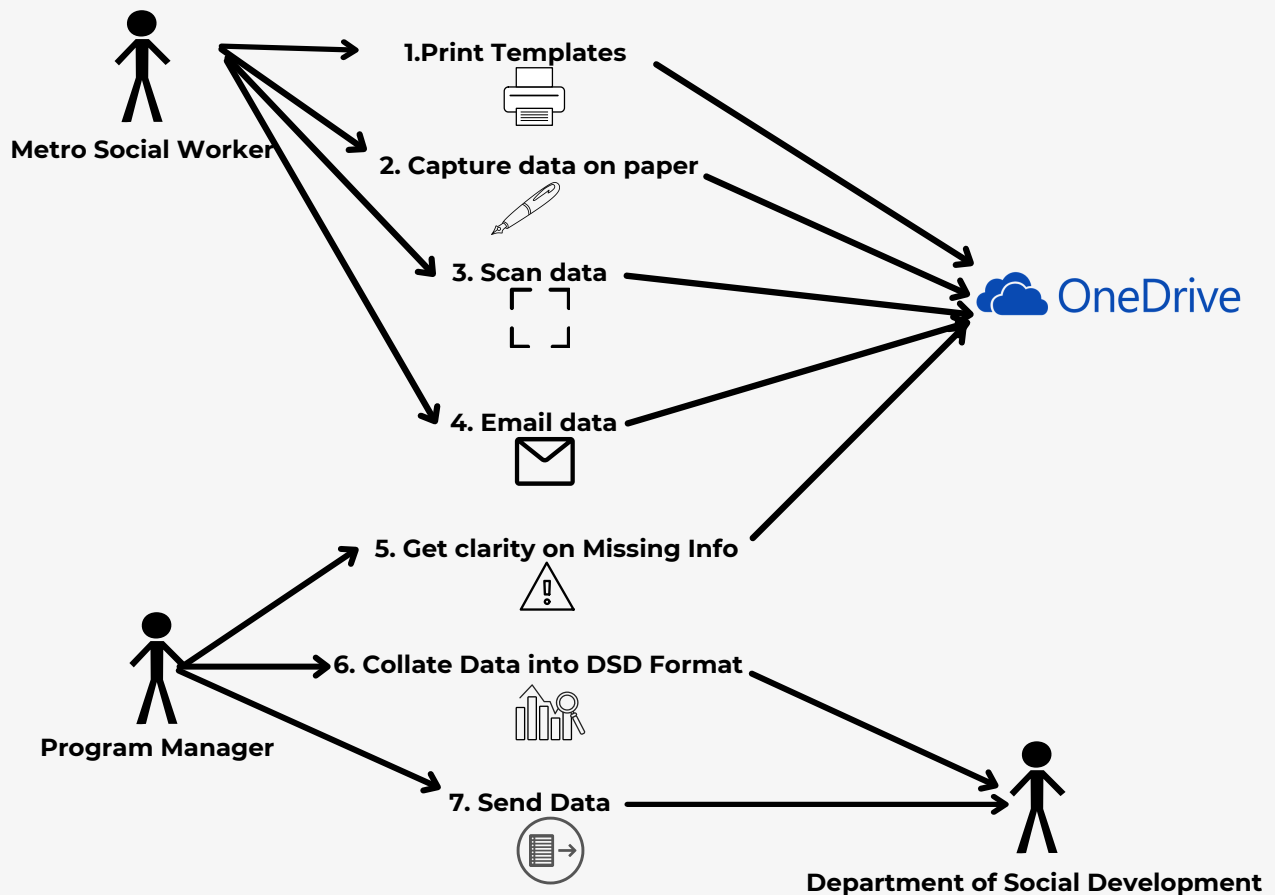


Figure 1.1

The use case diagram above (Figure 1.1) is a high-level depiction of how the organization currently performs tasks related to completing and submitting reports. It showcases, from the metro social worker and program manager's point of view, the current system. The metro social worker begins by printing the templates of the form at the office. They then capture the data onto the template by hand. This is followed by them scanning the data and then finally emailing it to the program manager. The program

manager is then responsible for getting clarity on any missing information or known errors in the document. After this, she needs to collate the data into the Department of Social Development. Which has proven to take time to format and read type out all the information required by the department. After this she then sends data to the department.

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# PROBLEM DEFINITION

A variety of problems have arisen due to the current stats collection and reporting process. These are the following problems identified:

1. Monthly stats consume a lot of social workers' time due to the amount of information that must be reported on. Stats need to be collected for more than 30 homes and the social workers currently spend a full day (and some more) to compile the monthly stats document.
2. Some key Information about students can be missed or entered incorrectly which is not noticed until the final report.

3. Quarterly reports compiled by the program manager take a lot of time to consolidate all the social worker's individual reports.

4. Incoherent information when compiling the report requires the program manager to travel to speak with homes outside of Cape Town.

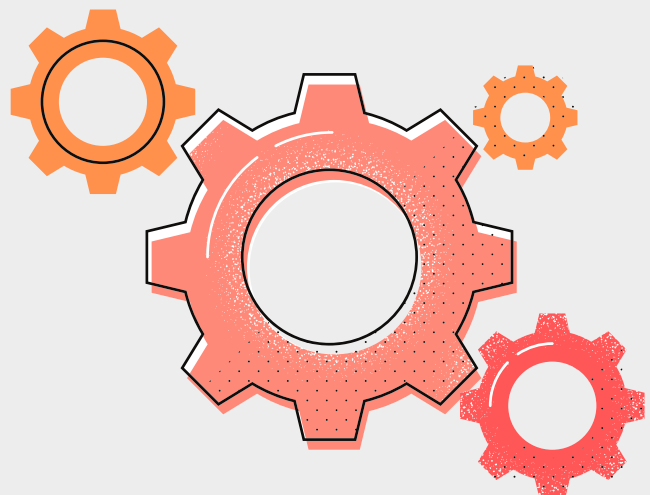
In discussions with the project sponsor, they have requested the solution be a simple, user-friendly electronic tool that makes it easier to capture information and generate their reports.

## BUSINESS OBJECTIVES

The Home from Home organization approaches foster care with a "Model of Care" framework which composes of four main pillars:

1. Provide Education
2. Therapeutic Intervention
3. Transitional Support
4. Reunification

These objectives are followed up with programs to ensure that these targets are met.



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# ASSUMPTIONS AND CONSTRAINTS

## Assumptions:

- The program manager and metro social workers will have internet access, at least at any given time that they need access to the system.
- The approved scope will not change throughout the duration of the project.
- The estimated budget of the project will not change throughout the project's duration.
- Training or assistance will need to be provided in how to utilize the selected solution to optimize the project sponsor's use of it.

## Constraints:

- The project needs to be completed by 14 June 2021.
- The solution should preferably be free of charge.
- Users of the system are not proficient in using Excel - the project's solution must minimize any user interaction with Excel.
- Users of the system do not have good computer literacy skills



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# STAKEHOLDER ANALYSIS

The context diagram (Figure 2.1) is a high-level diagram that is used to show all external stakeholders of the project as well as their inputs into the project and their expected outputs.

The main external stakeholders in the context diagram are the project sponsor which in this case is the Home From Home organization. Home From Home then constitutes the program manager and metro social workers. This is because they stand to gain the most from the successful completion of the project as the organization and end-users. Therefore the main output from the project for the key stakeholders is the stats collection and reporting solution that is recommended in this project.

The project sponsor was responsible for defining the vision and high-level objectives, approving the scope, resources, and budget for the project. In this process, the project sponsor provided valuable information and insights into the problem and the specified requirements for the solution.

The program manager in their individual capacity provided authorization and access to sample reports to provide the team with a better understanding of the project requirements.

Lastly, we looked at the University of Cape Town's (UCT) involvement in the project. UCT's involvement is separated into four different arms featuring the NewWave Team, NewWave Team mentor, INF3011F course convenor, and the Knowledge Co-op team.

The NewWave Team is responsible for providing a technological solution to the business problem by leveraging their knowledge and available resources. In turn, they will receive a mark for the completed project. The NewWave Mentor will be guiding the team throughout the project in return for compensation. In the same breath, the Course Convenor will be fulfilling a similar role in the project.

Finally, the Knowledge Co-op team has partnered with Home from Home and so they hold an interest in how the project goes as they aim to reach their goals of development set out in their mandate.



# STAKEHOLDER ANALYSIS



Figure 2.1

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# PROPOSED SOLUTIONS

**W**e have found 3 different electronic tools which could be implemented as solutions.

In finding these solutions, we had to take into account the following considerations:

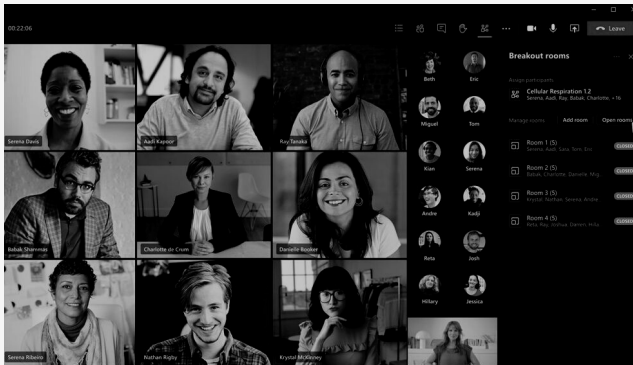
- The social workers are not proficient with spreadsheet tools like Excel.
- At times, there is no internet connectivity when social workers are out in the field. As such, an offline data collection functionality would be useful.
- The tool must be able to collect data aligned to the DSD's requirements.
- Social workers have expressed that they would like minimal typing on the tool – the tool should include button clicks or quick actions. to reduce reporting time
- When asked to visualize a solution, both the program manager and the social workers mentioned using dropdown lists.



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# MICROSOFT TEAMS - SOLUTION 1

**MICROSOFT TEAMS IS A COLLABORATION PLATFORM THAT INCLUDES CHAT, VOICE, VIDEO, AND FILE SHARING. HOME FROM HOME HAS ALREADY BEEN UTILIZING MICROSOFT TEAMS, PRIMARILY FOR TEAM MEETINGS DURING THE PANDEMIC.**



The social workers have expressed a liking for the platform, leading us to believe that Teams is a worthwhile solution to consider. By expanding the organization's current use of the platform, it can not only solve their stats reporting problems but also further improve their efficiency and workflow.

Teams includes strong Microsoft 365 integration options. This means that social workers can capture data on a predesigned Microsoft Forms template. The program manager will be able to share these data collection forms with social workers via their Microsoft Team. In order to align with the monthly stats collection document that social workers are currently using, the form will feature all the input data required for DSD reports with additional benefits. For example, data validation will be in place to ensure that social workers enter valid data types and each required field is completed.

Since Microsoft Teams is available as a mobile app, social workers will be able to fill in the electronic form without internet connectivity while they are out in the field using their phones. This eliminates the need to record data by hand. The form can also be constructed in a way that minimizes the need for typing and incorporates drop-down lists and checkboxes to save time on data collection.

The data recorded in form submissions can be transferred into an Excel sheet, allowing the statistical data to be listed, categorized, and tallied automatically. This process will save the program manager the time of calculating totals and ensure that there is no missing data. Because a suitable Excel sheet can be pre-made as a template, the program manager will not need to be skilled with Excel to extrapolate the data collected from the forms.

## ADVANTAGES

Teams has already been used within Home from Home for over a year. Thus, implementing it as a solution would prevent the introduction of an unfamiliar tool, which may be intimidating for social workers and the program manager.

The Microsoft Teams tool is staffed with 24-hour support teams and provides training videos for most of its functions. This would greatly assist the Home from Home Programme Team, as the staff is not technically inclined. Thus, the constant support teams and videos available should act as sufficient assistance.

Additionally, this solution is cost-effective. If Home from Home has Microsoft 365 Business Standard licenses already in place, this solution would cost nothing to implement. If the organization does need to purchase more licenses, Microsoft offers Business Standard licenses at a cost of just R55 per user per month. However, since Home from Home already utilizes Microsoft Teams and One Drive, and considering that Microsoft Forms is free to use, this is unlikely to be an issue.

As aforementioned, Teams is available as a mobile app. This allows for communication and data collection anytime, any place. Microsoft Forms, which can be used for data collection, has offline functionality, allowing social workers to collect data even when they don't have an internet connection.

## DISADVANTAGES

This solution will require upskilling the users to understand the Teams ecosystem to optimize their experience and reap the system's benefits.

Additionally, Microsoft Teams does not include the functionality and specialized features to create forms that comply with the format required by the DSD. However, the improved monthly data collection process is likely to make the final quarterly reporting process significantly easier.

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# KOBOTOOLBOX - SOLUTION 2

KOBOTOOLBOX IS AN OPEN-SOURCE SOFTWARE TOOL DEVELOPED FOR FIELD DATA COLLECTION AND ANALYSIS.



KoboToolbox software is completely free and open-source, which simply means it is made available to anyone and can be redistributed and modified. Social workers would be able to share and collaborate on data collection documents to allow for a well-coordinated final quarterly report to the DSD. The simplicity of the software means that social workers who do not have strong technical skills will be able to use the system within a short period of time with little need for extensive training.

The main feature of the Kobo Toolbox is the Form Builder. This tool allows users of the software to easily create forms for data collection and analysis. The Form Builder allows various types of data to be collected, from audio to

geo-referenced data and provides the option of using dropdown lists, notes, ratings, and numerous others. This ensures sufficient and comprehensive data is available for the monthly reports generated by social workers while minimizing any inconsistencies or missing data entries.

Form Builder provides the program manager the time-saving option of saving forms as templates and allowing Excel documents to be imported and edited. Additionally, questions can be saved and reused in other forms.

Once the forms have been created and deployed, data can be entered on any device both offline and online. If the social worker is offline or on the field, data is stored locally, ready to be submitted to the server when the social worker has internet connectivity again. Errors in data are also minimized since data validation occurs in real-time.

KoboToolbox software utilizes Secure Sockets Layer (SSL) technology, which ensures data is secure and kept private. The software also safeguards against the loss of files of any size.



Once data is collected and stored, the program manager and her team can create summary reports containing graphs, tables and data visualizations over maps.

## Advantages

- Easy to use and require little to no training or technical background.
- Includes an offline mode, allowing social workers to collect data on the field.
- Available on Android devices and over web browsers.
- Minimizes errors in data entry.
- It's completely free, forever. There are no hidden fees, no tiered plans, no premium features.
- From the moment you create an account, all users have access to the full suite of features available on our platform.

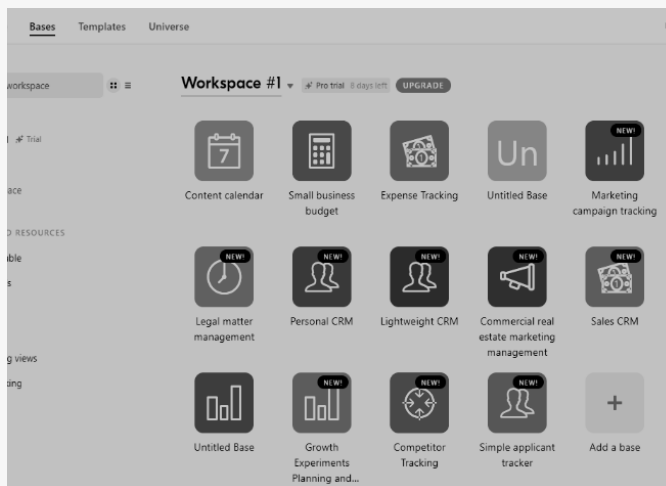
## Disadvantages

- Over-simplicity and the lack of functionality may make it difficult for quarterly report forms to adhere to the standards and format required by the DSD.



# AIRTABLE - SOLUTION 3

**AIRTABLE IS OFFERED AS A SUBSCRIPTION-BASED SERVICE AND PROVIDES A CLOUD COLLABORATION SERVICE FOR ENTITIES THAT REQUIRE MANAGING DATABASES.**



The main feature of Airtable is the management of databases. It is extremely user-friendly with an easy-to-use user interface (UI). It has a simple system of adding and editing entries to the database that will be a major improvement to Home from Home's current manual writing method. It has the appearance of a spreadsheet, but with a much less intimidating look.

Another important feature is the form feature. With this, one can create a form that can be filled in from any digital platform. The form can then be uploaded and integrated into the database directly, given that there is either an internet connection or a third-party application like Formworks is used, which can work offline.

Forms can be created very easily, with an optional drag-and-drop feature allowing for a more intuitive process. Like the database, the UI is very user-friendly and can be used by anyone who is not tech-savvy and only has surface-level computer skills. Airtable can also be used to create reports.

From the database, one can create a simple graph or table design that is both easy to make and understand but will still have the aesthetic and design principles of a professional business report.

Airtable privacy policy complies with the General Data Protection Regulation (GDPR) and data is encrypted using 256-bit encryption, which ensures sensitive data in Home from Home is safe from both leakage and privacy violations.

Airtable has many bonus features that make it more than a basic database manager. For one example, it has support for many common applications such as Office 365, OneDrive, and Google drive.

Airtable is a subscription-based service and will therefore cost money. It does, however, offer a half-price discount for non-profit organizations.

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# AIRTABLE - SOLUTION 3

## Advantages

Airtable has many features that make it not only functional for the problem but beyond that, makes it quite easy to maintain a database that is both functional and has the appearance of a modern-day business. These features in combination will drastically decrease the amount of time needed to not only record data but also make reports from them.

## Disadvantages

The downside of this application lies in three areas. First, it is a subscription-based service that requires a monthly fee that may or may not be feasible when the money could be used elsewhere.

Second, its cloud servers are in the USA, which may place too much responsibility for the data on a foreign country. This could potentially be a security or safety risk.

Lastly, forms cannot be filled in on the Airtable native app for phone devices, but instead needs a share link first, which can then be used on the mobile device through the default browser. It also can only work online natively with regards to forms and would require a third-party application to work offline. Additionally, Airtable forms cannot contain multiple pages and require third-party applications.





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# SELECTED SOLUTION

THE PROJECT SPONSORS SELECTED SOLUTION IS MICROSOFT TEAMS

We believe that the final selected solution by Home from Home will solve the current problem faced by the organization. As aforementioned, the Microsoft Teams solution comes with many functional benefits and features that will aid the organization. We believe that the familiarity, simplicity, affordability, and integration of Microsoft Teams made it the best solution for Home From Home. We have also provided a use case diagram (pg 15 - Figure 3.1) as to how best the organization could implement this solution.

## 01 | Familiarity

The key to providing any solution to Home From Home was ensuring the team would feel comfortable and familiar with the solution. The team had explicitly stated that they "think in Word and not Excel". Since they had already gained experience in using OneDrive and Microsoft Teams, we saw great upside potential with keeping the solution within the Microsoft ecosystem.

## 02 | Simplicity

The social workers have made it clear that they are not technically inclined and would prefer a solution that accommodates this factor. As such, the simplicity of the solution makes it suitable as a solution for Home from Home. Microsoft Teams as Microsoft Forms are easy to use and simple to understand.

## 03 | Affordability

This solution falls within the Home From Home budget. The organization will not have to pay for the additional services because they already have a Microsoft 365 package that provides them access to Microsoft Teams.

## 04 | Integration

The solution incorporates applications provided by Microsoft Office 365, a tool that is already frequently used by Home From Home. The easy integration of the solution onto their mobile devices enhances the team's productivity and allows for a workflow that's simple and seamless.

# SELECTED SOLUTION

## THE NEW (TO-BE) USE CASE DIAGRAM

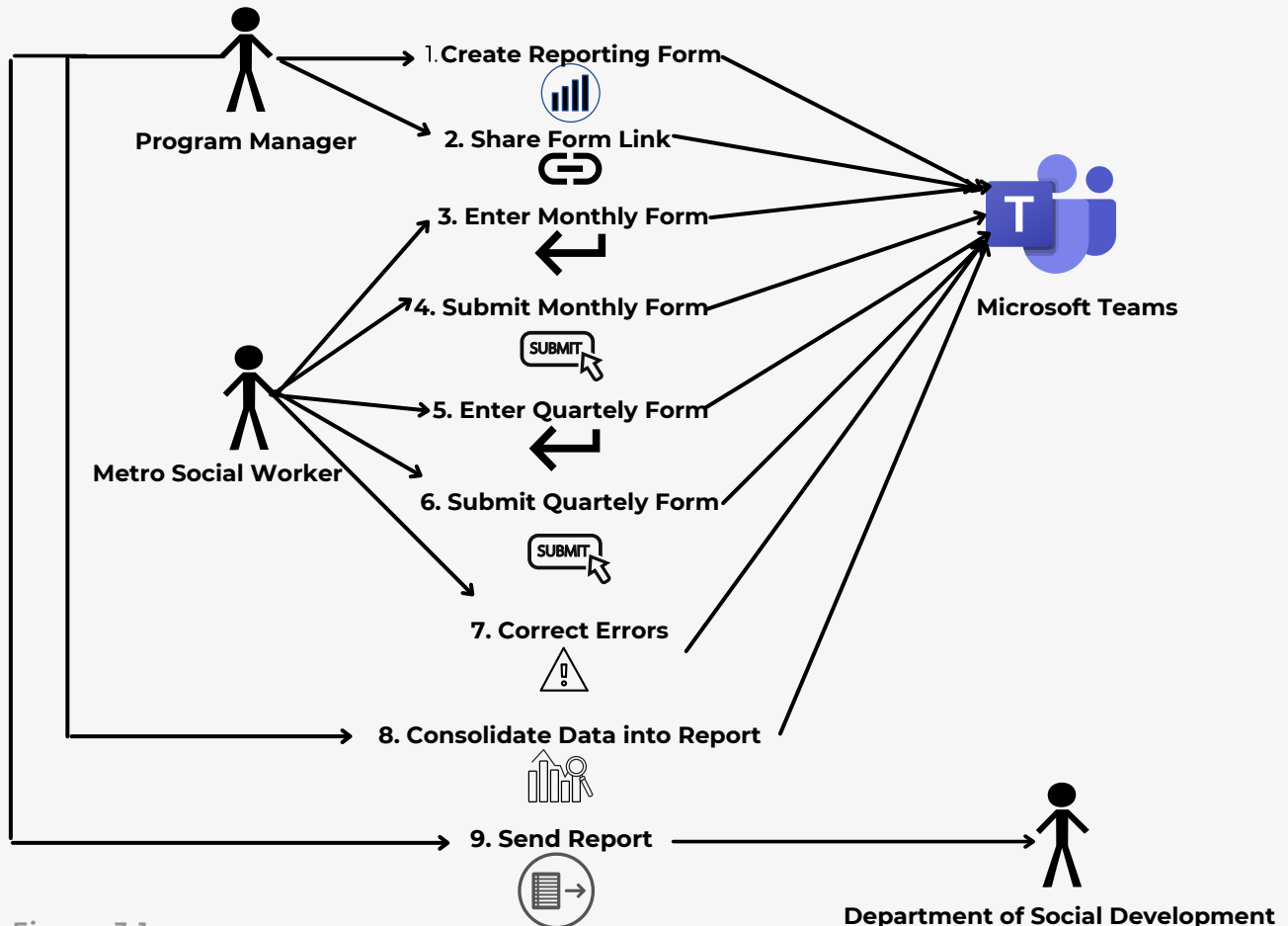


Figure 3.1

The following use case is a depiction of how the users will perform tasks on Microsoft Teams. It showcases, from the user's point of view, the system's behavior as it responds to a given request. This use case diagram is represented as a sequence of simple steps, beginning with the user's goal and ending when that goal is fulfilled. Hence this new use case for the selected solution (Microsoft Teams) will assist the organization to submit quality reports efficiently to the Department of Social Development. The Use Case in Figure 1.2 will work in

the following manner; The program manager will begin by creating the reporting form in Teams through the Forms plug-in. The program manager will then share the form with the social workers who can then fill it out whenever they have access to the internet. The Social workers will then submit this report monthly and once a quarter. The program manager will then consolidate this information by copying and pasting the information into the DSD formatted template and then submitting it to the department.