

## **CAPSTONE PROJECT SUMMARY**

# CAPITAL ACTIVITY: AUTOMATION AND DATA VISUALIZATION

# TAMAS STAHL MS IN BUSINESS ANALYTICS

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#### Summary

The main objectives of the project are to (1) automate the data gathering and transformation process, (2) understand the fund performances and (3) create a tool in which data is visualized for the members of the Platform.

### Problems

#### Data transformation

The data transformation is necessary as there is no one data base to check out all the data needed. The data is not stored correctly and there is no centralized source or data warehouse.

For an employee to get the data – for the period of more than a quarter numerous Excel files are necessary to be opened and analyzed, separately. The process of finding the right information for the reports and questionnaires should be made less burdensome and should spare valuable time for other more useful works. The management deemed this problem to be addressed as the data is frequently used for several recurring tasks.

#### **Competitor analysis**

The fund in question is going to be the flagship fund of the Platform for the upcoming years. As the fundraising period has recently been closed, it is even more important to understand the behavior and performance of the competitors. It is important to see where the fund stands in the market.

#### Interactive dashboard

As the capital activity and fundraising data is stored all around the place there is no clear visualization of the data in one place. The client's request was to build an interactive dashboard that will contain all the required data.

The dashboard will be useful for management decisions as well as reporting tasks. The management would appreciate a dashboard with clear and self-explanatory visuals. Meanwhile, the members of the Platform would require visuals as well as the exact numbers for the reporting and questionnaire purposes.

### Solution

During the Capstone project several issues were identified on top of the analysis plan. Originally, Tableau would have been used as the main tool, but due to internal policies, Power BI was chosen as the tool to build the data transformation and gathering pipeline by using Power Query, then create the visuals for the management and members of the Platform.

Data transformation was created inside Power BI, from which the final data base could be exported. A model was built by using all the data tables provided by the client, and other helper tables.

The model was built in a way, that it could be used for similar projects in the future. To improve the solution, further steps should be implemented before the data gathering, as data quality was an issue throughout the project.

As a result of the built model, valuable working time was spared since no multiple Excels had to be opened. Having the data in one place resulted in faster information export.

The competitor analysis was created with the intention of analyzing the market of the Platform's flagship fun. The most focal decision point was the determination of which funds and fund managers to take as competitors. Furthermore, the metrics to compare, had to be decided.

A final report was created to visualize the performance of the Platform's flagship funds compared to the identified approximately 50 other competitor funds.

Finally, several interactive dashboards were created to visualize capital activity and fundraising data in an elegant and self-explanatory way. The dashboards will be used by not only the members of the Platform for the reporting tasks, but it will also be used by management to analyze trends, identify connections, and make decisions.

## **Key learnings**

Key learnings are the following:

- The Microsoft Power BI stack can perform end-to-end analysis required for similar projects.
- Data quality in real datasets often pose serious challenges.
- Communication with the project stakeholders is essential and would make both parties up-to-date and trusting.
- Processes are slower than expected and unexpected events occur. Therefore, it is crucial to start the project on time and leave enough time for feedbacks from the client.
- The objectives and tools might change more rapidly than expected.

## Improvement areas

The data quality is the most important area that should be addressed in the future. The planned two or three years of data could not be gathered as the data was missing, the responsible parties could not collect the data from the teams. The flow of the data should be more automated between the teams.

Furthermore, other data related issues arose that should be addressed as for reporting purposes the quality and reliability of the data is one of the priorities. Incorrect data could not be reported internally or either to investors. Additionally, the data related model could be simplified in the future as some of the processes might have easier solutions. However, the simplification could not fit the time frame of the project.

The interactive dashboard was tried out only a small number of members of the Platform. To grasp what other metrics and variables are important, other teams could be involved as well. Validating the content of the dashboard is priority as the dashboard were intended for Platform use and not only smaller department use.

## Conclusion

The project included several difficulties from the start but after getting familiar with the new software, the tasks became easier by day. The final documents were delivered, and the tools are working as they are intended.