



Southville International School and Colleges

Luxembourg St., BF Homes International, Las Piñas City 1740

Master in Information Technology

FDS CUBE IN POWER BI

An Independent Project Presented to the Faculty of the College of
Information Technology of Southville International School
and Colleges, Las Piñas City

In Partial Fulfillment of the Course Requirement of the Degree
in Master in Information Technology

Submitted by:

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June 2021



APPROVAL SHEET

This independent project, entitled, FDS Cube in Power BI, prepared and submitted by Mark Angelo A. Ligot, in partial fulfillment of the requirements for the degree Master in Information Technology, has been examined and is recommended for acceptance and approval for oral defense.

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ACKNOWLEDGMENTS

I want to start by thanking God, the Almighty. Jesus, my savior. All things are possible through your grace and power.

I want to thank my wife, Ana, for being supportive of my endeavors, always, I love you, that's why I married you twice! I'm lucky because I know I can unfailingly rely on you for us to be able to achieve our goals, which makes us a great team. You're always thinking the best for our children, and constantly reminding me what matters most. Always.

Amira, my princess, you are the kickstart I needed to be mature. I truly changed and became a responsible man when you were born.

Aaron, you are the reason I keep pushing myself to new heights. You taught me unconditional love and your smile always brightens up our days.

Special thanks to my mom, Connie, for the love and full support to getting my Bachelors Degree. My sister, Mica, for helping me out when I was in the Philippines.

Thanks to my dad, Arnel and stepmom, Faye, for all your support, advices and for giving me structure throughout my teenage years. Also, thanks to my in-laws, Susan and Godofredo for always supporting and guiding us every step of the way. Thank you all for the love!



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Thanks to my other siblings, Vanessa, Meg and Chris, always keeping me in check to be the best brother. Thanks, Tita Nine and Tita Susan for the support when I was growing up in the Philippines. My cousin Jeff, (my other brother) always love you bro.

My former boss Jean, for believing in me that I can do better and seeing my potential. You are instrumental in restarting my career here in the U.S.A.

For that, I will always be grateful.



EXECUTIVE SUMMARY

The FDS (Finance Data Strategy) team at Loan Depot has expanded its scope to include data that is not related to finance. The FDS group's value proposition revolves around developing a data-driven strategy. Since its expansion, the FDS has incorporated data from areas other than finance, such as operations, sales, marketing, and human resources. As a result, the "FDS Cube" was created, combining enterprise data into a single repository source that exists on an on-premises SSAS architecture.

The FDS identified the SQL table sources, extracted the required columns, transformed the data to channel driven business logic, and loaded it into an SSAS server, which serves as a deployment platform for structured datasets. This solution has given financial analysts the ability to pull data and incorporate hundreds of different data point dimensions, as well as business logic and complex formulas, without having to have the technical skills normally required to pull data, and the final output is in excel format, which is the preferred format for analysts. It can also be used in other programs such as Tableau and Power BI.

The complexity of retrieving data from various data sources increases as the scope expands. Alteryx workflows have improved data-pulling management. They are properly scheduled and run; however, these



jobs do not always run successfully. If any one of the jobs fails, it will have a cascading effect and jeopardize data integrity. Essentially, all jobs must run when they are supposed to and in the correct order. According to Reay (Reay, 2018), parallel processes are required to avoid a single point of failure. A sufficient amount of redundancy will prevent system-wide failures.

The FDS Cube data set is currently hosted on an on-premises server. Massive influxes of query requests, both planned and unplanned server maintenance, and even forced password changes can all cause any of the jobs to fail. There is also rogue reporting that employs custom SQL logic that is not always updated and is not always governed.

As the FDS group matures, the way datasets are generated must change, and any changes to existing datasets must go through change management. According to Jones (Jones, 2004), we must foster ownership in order for leaders to accept responsibility for bringing about change in areas under their control. There must also be a platform that can overcome the technical constraints of having your dataset on an on-premises architecture.

Power BI Premium will address two existing issues. The first is the current hardware limitations. Microsoft and Loan Depot have servicing



agreements in place that would contractually guarantee a 99 percent reliability rate. Power BI Services can serve as both an ETL tool and a deployment platform for structured datasets, avoiding the problem of multiple points of failure.

The second is that the implementation process will include a formal structure to vet data from the appropriate owners, changing the culture of rogue reporting, and the byproduct will be a single source of truth with data that is agreed upon across the entire enterprise. According to Wrike (Wrike, 2020), all project stakeholders make project decisions using data from a single source of truth. A data governance commission will ensure that any changes to logic are approved, and change management will ensure that any changes to the dataset's structure are also approved. The FDS would have created a platform with live data that is accurate because it has been thoroughly vetted at the end of the project, as well as a single source of truth across the enterprise.



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**CHAPTER 1****OVERVIEW OF THE PROJECT****1.1 Vision, Mission, Goals****Vision**

To provide a platform on which data can be used as the single source of truth throughout the enterprise. This will establish an enterprise standard for data sources used in reporting, auditing, KPIs, and other metrics. This data will provide the necessary intelligent strategic decision insights for operational capacity, revenue sales forecasting, marketing expense forecasting, and headcount forecasting for hires and attritions.

Mission

To create fully vetted, documented, and scalable data sets and data flows from which the enterprise can benefit from data analysis. The appropriate business partner will retain data ownership, and their business logic will be translated during the ETL process. A compromise will be struck between channel-specific business logic and a rigid structure of allowable data fields and dimensions.

Goals

- Single Source of Truth – Having thousands of data points from across the enterprise can be overwhelming, resulting in incorrect analysis if data points with no correlation are used to present a misleading fact.



Analysts must be constantly exposed to the business side in order to gather relevant data points and then incorporate operational insights from business leaders. According to Hertig (Hertig, 2020), storing large amounts of historical data in well-structured datasets lays the foundation for complex analysis.

- Elimination of multiple “single points of failure” – Integrating the various systems directly into the Power BI service would eliminate the need for Alteryx jobs to compile data sets, as well as another job to push and deploy new data into SSAS. The ETL process and deployment are essentially integrated into the Power BI service, eliminating the need for Alteryx and SSAS jobs. Due to dependency rules, a single job failure can cause a chain reaction of failures.
- Data Integrity and Lineage - There will be a governing arm responsible for data governance, change management protocols, end user training and certification, and a parallel transitional period.
- Process Documentation - Have a well-documented process for extracting, transforming, and loading data into the Power BI service that originates with the original data owners. A structured process is required for effective change management and data governance.



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- Cost Savings for Network Architecture – Having the data reside in the Azure data lake would offload on prem network strain and equipment degradation.
- Data Availability – Access to instantaneous data without having to wait for job or stored procedure. The elimination of job dependency schedules would ensure that the end user will always see live data.
- Seamless integration of external data – Expanding the scope of data outside the walls of the organization would give the organization a pulse of the outside world giving visibility to market trends and volatility.
- Data Discovery – By enabling the end users to have access to structured datasets that seamlessly blends enterprise data will reveal insights and foster innovations.

1.2 Assumptions and Constraints

- Executive sponsorship from the EVP / Chief Strategy Officer
 - Since Finance is under the CSO, the mandate for the implementation of Power BI will be absolute.
- Power BI Premium subscription
- IT, Network and Infrastructure stakeholder partner – all technical and software licensed purchased and set up to appropriate users.



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- External Executive sponsorship – EVP of Sales, Operations, HR, Marketing and Business Intelligence
 - Blending Enterprise wide data needs the mandate to ensure data is shared, procedures and protocols are followed, and BI to ensure data governance and lineage is enforced.
- FDS Team certified to Power BI Software

Constraints

- Budget – Cost of Power BI Premium subscription
- Timeline – Completion of the FSD Cube migration would be Q4 of 2021
- Resource – FDS Team size of 6 Sr. Analyst and 1 Manager



1.3 SWOT Analysis

According to Schooley (Schooley, 2019), the primary objective of SWOT analysis is to help organizations develop an awareness of all the factors involved in making a business decision. Below is the SWOT analysis for the project.

Strength * Single Source of Truth * Data Discovery * Network Stability * Live Data * Integration of External Data	Weakness * Modifications will take time * Data Cap size cost
Opportunities * Blending of enterprise data * Live tracking data responsiveness * Data Governance	Threats * ETL Process breaks * Non-Compliance of End Users * Bad Data input

Table 1 - SWOT Analysis

Strengths

- Having a single source of truth of vetted data that is universally accepted across the enterprise



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- A platform for analysts to mine and data discovery, essentially the freedom to create dashboards, project trends and allow executives to make data driven decisions.
- Have the data represented in any medium such as excel, tableau, Power BI dashboards
- Eliminates points of failure during ETL process
- Eliminates the physical limitations of having an on prem SSAS
- Acts as the data modeling, visualization and data storage, making Alteryx and Tableau a redundancy.

Weaknesses

- Importing new data sources would be time consuming because there would need to ensure proper vetting
- Data cap / size limitations. Identifying what would be relevant data due to cost efficiency.

Opportunities

- Blending financial, headcount, marketing and operational data would allow visibility on cost / revenue per unit for every stage of the business cycle.
- Live data tracking would enable the right decision makers to correct or enhance a positive / negative trend.



- Identify how a process can be improved and how the data can be safeguarded.

Threats

- Any breakdown to the ETL process when transferring the data into PowerBI
- Identify how the data is inputted so that there will be limited “bad data.”
- Any system wide alterations to any software being used by the data originators.



Action Plan

According to Furgison (**Furgison, 2019**) , creating actionable strategies involves breaking down long-term plans into simple specific milestones. Performing a TOWS analysis will improve strategic alignment and reveal previously unknown aspects such as hidden threats and opportunities.

Strength – Opportunities * Change management * Data Governance	Weakness - Threats * Excessive Modifications * Reluctance to accept
Strength – Threats * Incorrect insight from unrelated correlation of data	Weakness Opportunities - * Learning Curve is steep

Table 2 – Action Plan

Strength – Opportunities

The establishment of the Data Governance commission, as well as the establishment of structure and protocols for projects and change management, would usher in an enterprise architecture culture that does not currently exist. Identifying requirements, scopes, and deliverables is currently always open-ended, and this would initiate a positive culture change.

Weakness – Threats



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The structure established may result in excessive system modification. When modifying or adding more dimensions to the system, safeguards for having a business value must be present.

Strength - Threats

Having thousands of data points from across the enterprise can be overwhelming, resulting in incorrect analysis if data points with no correlation are used to present a misleading fact. Analysts must be constantly exposed to the business side in order to gather relevant data points and then incorporate operational insights from business leaders.

Weakness – Opportunities

The learning curve for fully utilizing the features of a Power BI application and services is steep. There is an opportunity to educate and elevate staff technical knowledge in order to stay competitive and keep up with technological advances.



1.4 Project Deliverables

From conceptualization to the actualization of the project, the FDS group will follow the project delivery timetable shown below.

Phase	Deliverable	Timeframe
1	Proof of concept and presentation	Q4 2020
2	Reverse Engineer Current SSAS Process	Q4 2020
3	Power BI Service Subscription	Q1 2021
4	Training of FDS Team to be SME of Power BI	Q2 - Q3 2021
5	Data Migration	Q2 - Q3 2021
6	Report Migration	Q3 - Q4 2021
7	Parallel Testing of SSAS and Power BI Service	Q4 2021
8	Training of End Users	Q4 2021
8	Implementation	Q4 2021
9	Maintenance and Support	Ongoing

Table 3 – Project Deliverables

1.5 Schedules and Budget Summary

The budget is \$5,000 per month for a PowerBI Premium subscription per capacity. This is less expensive than a per-user license. The project began in the fourth quarter of 2020, and the foundation for the existing FDS Cube has already been laid. The FP & A team will be introduced to the new Power BI



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analytics tool in the second quarter of 2021.

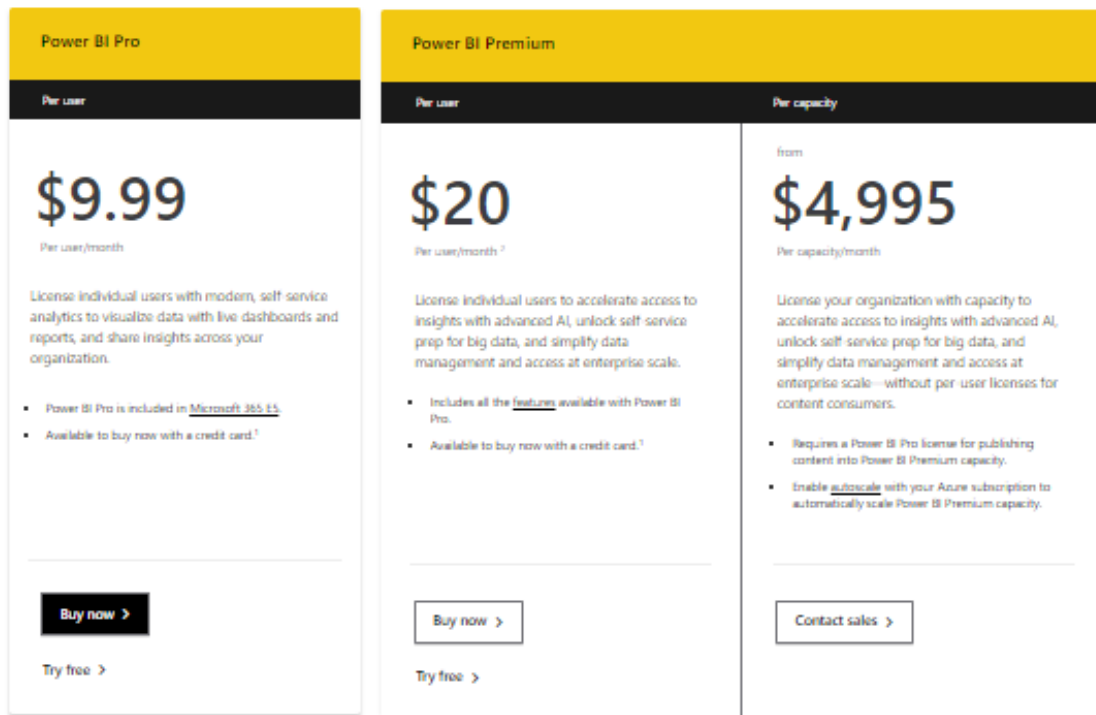


Figure 1 – Power BI Premium Pricing Per Capacity



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Feature ¹	Power BI Pro	Power BI Premium Per user	Power BI Premium Per capacity
Collaboration and analytics			
Mobile app access	●	●	●
Publish reports to share and collaborate	●	●	
Paginated (RDL) reports		●	●
Consume content without a per-user license			●
On-premises reporting with Power BI Report Server			●
Data prep, modeling, and visualization			
Model size limit	1 GB	100 GB	400 GB
Refresh rate	8/day	48/day	48/day
Connect to 100+ data sources	●	●	●
Create reports and visualizations with Power BI Desktop ⁴	●	●	●
Embed APIs and controls	●	●	●
AI visuals	●	●	●
Advanced AI (text analytics, image detection, automated machine learning)		●	●
XMLA endpoint read/write connectivity		●	●
Dataflows (direct query, linked and computed entities, enhanced compute engine)		●	●
Analyze data stored in Azure Data Lake Storage		●	●
Governance and administration			
Data security and encryption	●	●	●
Metrics for content creation, consumption, and publishing	●	●	●
Application lifecycle management		●	●
Multi-geo deployment management			●
Bring your own key (BYOK)			●
Autoscale add-on availability (preview)			●
Maximum storage	10 GB/user	100 TB	100 TB
	Buy now > Try free >	Buy now > Try free >	Contact sales >

Figure 2 - Power BI Premium Pricing Matrix

Description	Cost Per Month	Total Months	Per Year
Power BI Subscription Per	\$4,995.00	12	\$



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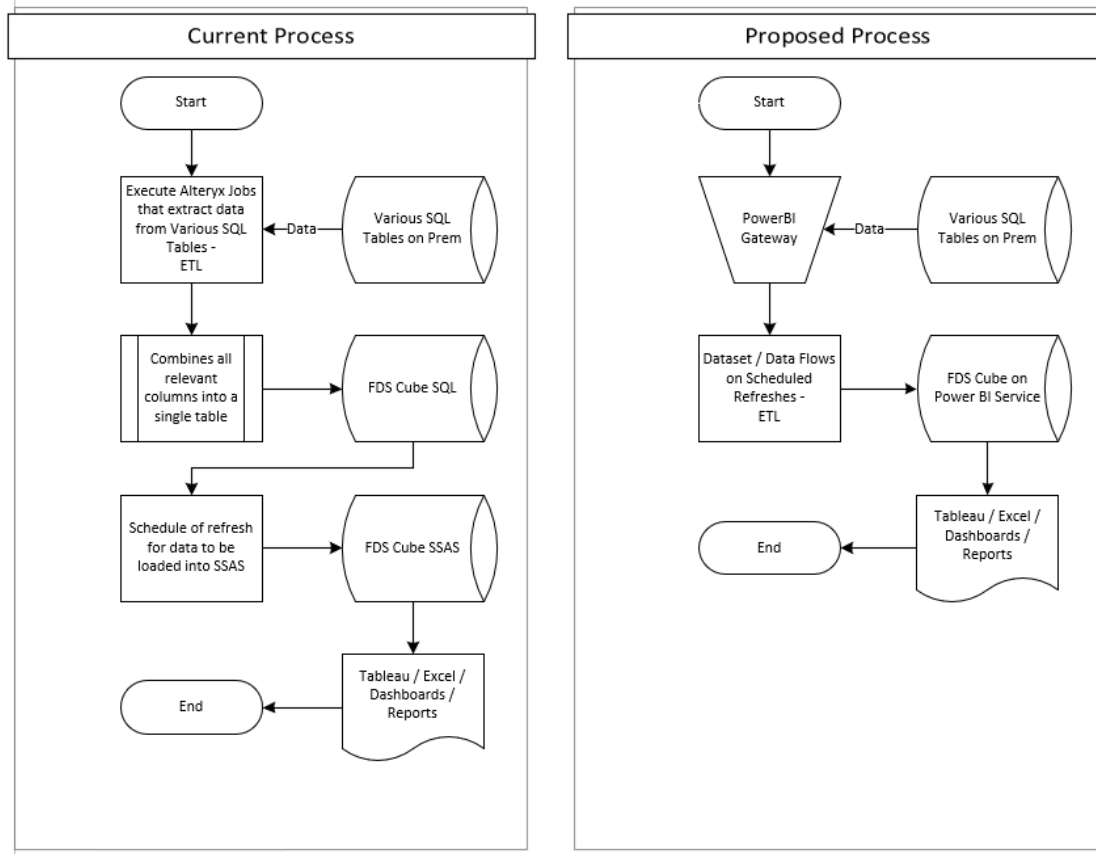
Capacity			59,940.00
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Table 4 – Cost of Power BI Premium



1.6 Evolution of the Plan

The FDS Cube is currently hosted on-premises in an SSAS environment. There are several scheduled Alteryx jobs / workflows that extract data from various tables at various times and produce two massive SQL tables with the daily Snapshotted view of the data and the current status of the data. There are numerous points of failure that can occur, resulting in instability and outages, most of which are caused by physical limitations of an on-premises architecture. As a result, a platform as a service solution where data storage and computing processing power are hosted in the cloud is required.

**Figure 3 Current vs Proposed Process**



CHAPTER 2

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**CHAPTER 3****DEFINITIONS AND ACRONYMS**

FP & A – Financial Planning and Analysis responsible for budget, forecast, analysis and reporting them to the Executive leadership

FDS – Finance Data Strategy provides the tools and platforms needed to support the FP&A

Datasets – Structured data comprised of static dimensions and measures

Dimensions – Qualitative characteristics of data

Measures – Quantitative characteristics of data

SSAS – SQL Server Analysis Services is the analytical processing and data mining of Microsoft SQL Server.

SQL – Structured Query Language is the language written to extract data from a database

ETL – Extract Transfer Load is the process of extracting the data from a data source, transform or cleanse the data and loading it into a database.



Chapter 4

Project Organization

4.1 Organizational Project Structure

The VP of Finance Data Strategy, the project manager, reports directly to the project sponsor. The Organizational Project Structure would be the responsibility of the FDS Team. However, the FDS Team would still be required to carry out day-to-day tasks.

Interfaces

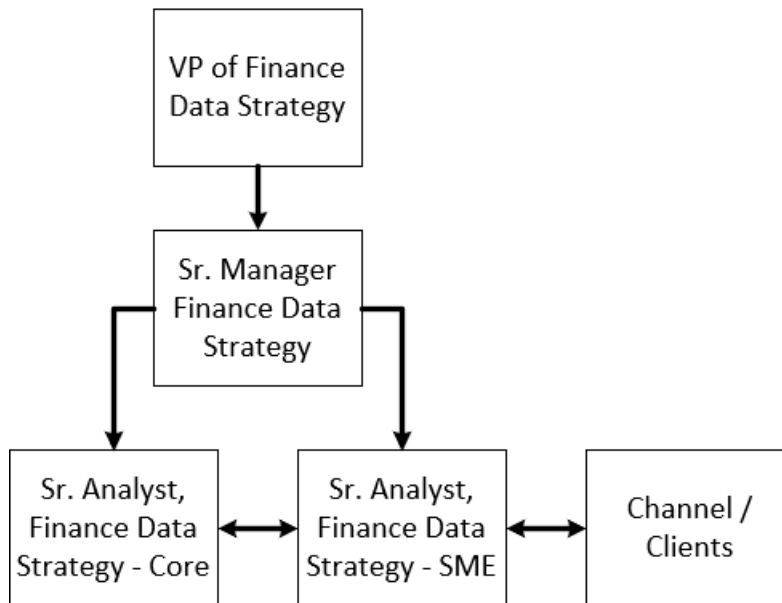


Figure 4 Project Org Chart

VP of Finance – Monitors the performance and development of the team and provides the guidance to Sr. Manager.



Sr. Manager – Fosters the communication between the Channels / Data Owners / Clients and the FDS SME.

FDS Core – Responsible for modeling the data and creating deliverables to executives

FDS SME – Responsible for coordinating with Channel / Data Owners / Clients to get requirements for deliverables on a Channel level. FDS Core and SME will collaborate / coordinate to ensure the datasets / deliverables are standardized across all channels.

4.2 Roles and Responsibilities

Each FDS member would be designated as the primary subject matter expert (SME) for the type of data they would extract, such as Sales Finance, Headcount, Treasury, MSR, and Marketing.

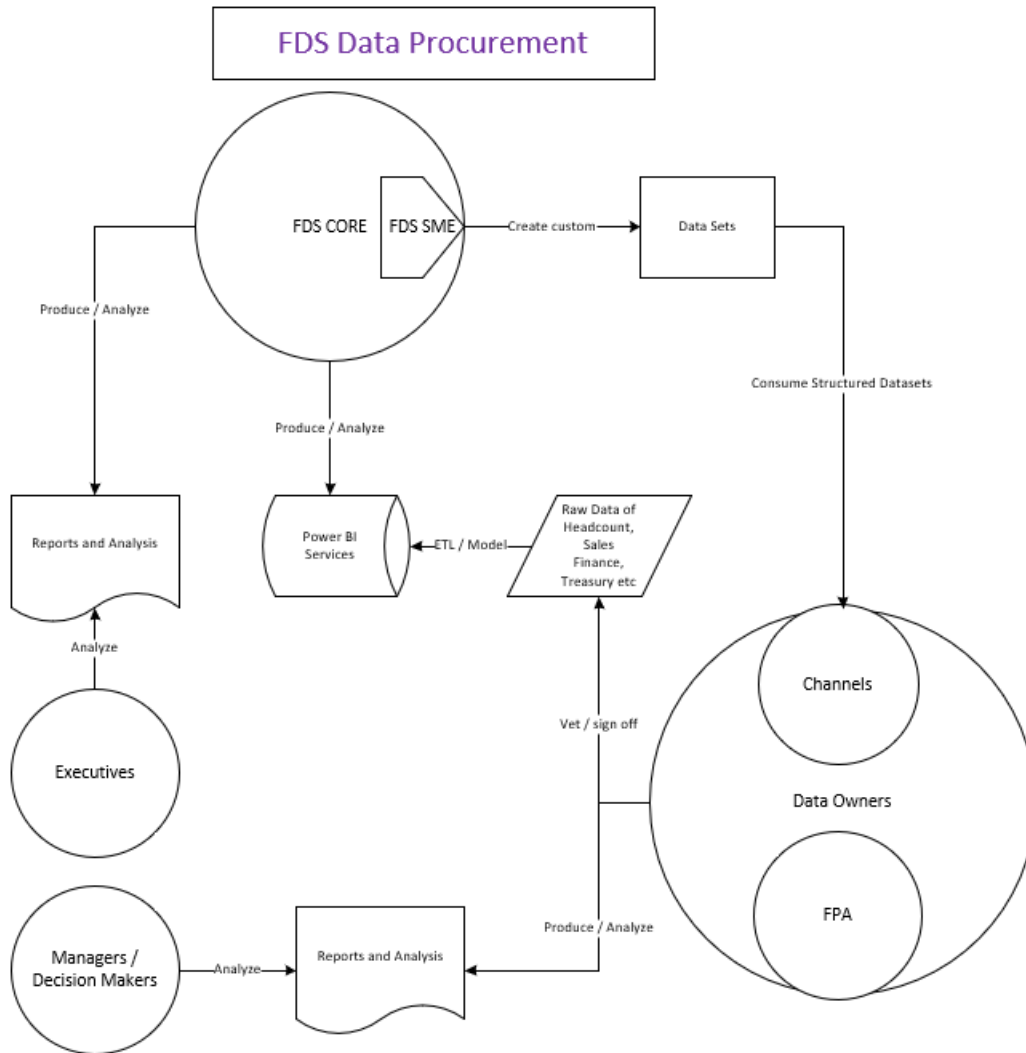


Figure 5 – FDS Data Procurement

The FDS Core would generate reports directly for Executive leadership, while the SME would generate data sets from which FPA analysts would generate reports for their respective customers.



Chapter 5

Managerial Process Plans

5.1 Start-up Plan

Estimation Plan

Subscription Software cost - would be \$5,000 per month for the Power BI Subscription

Power BI course training for FDS Team member - \$500 per person totals to \$7,000

It is critical that each FDS Team member would be fully equipped with the knowledge of Power BI. They will interface directly with the internal clients per channel.

Staffing Plan

Each member of the FDS Team must be trained and certified in Power BI. Knowledge of relational database structure, SQL language, and DAX language is also required.

The FDS Team will also be divided into two groups. The Core team would be in charge of standardizing datasets, documentation, and modeling. The SME would interact directly with channels and clients to ensure that channel-specific requirements are gathered.

Staff Training Plan



For Power BI training and certifications, the FDS team would attend instructor-led courses lasting up to 8 weeks. To ensure the independence and continuity of a Power BI service architecture, technical self-reliance is required.

5.2 Work Plan

SMART Methodology

Using the “SMART” Methodology, to write the project objectives

Specific – targeting a specific area of change. This change is how we create and store datasets.

Measurable – quantifiable progress and change. This is the SQL tables that have been successfully loaded into the PowerBI service.

Achievable – specific goals that are reachable. Need to set realistic goals for each project milestone.

Realistic – identifying the results that are realistically achievable given the available resources. The momentum of the project would be affected if the tasks and goals are unrealistic in both cost and time.

Time-related – specify when results are expected. Break out large scale complex tasks that would take weeks and specify in days what can be realistically finished in short burst of a few days.

Work Breakdown Structure

Identify key stakeholders / decision makers from the dataset originator

- There is a need to have all the department heads / key decision makers to agree that FDS's structured data set is the only data source
- There is also a need to ensure the data originators, those who does the actual input into the system, are doing it in a way that is consistent, and limit "bad data."

Identify existing processes / outputs / deliverables

- The process can include both data flow processes and how to capture operational data.
- The outputs and deliverables are the milestone at each stage of the operations, as well as reports and dashboards that key decision makers, managers will analyze.

Identify the dependencies of the data

- There will be milestones and dependencies that must be captured at each operational stage of the business. This information would provide a timeframe for how long an operational task would last and how to distribute overflow to minimize bottlenecks.



- Each dependency in data is an opportunity to define the resources needed to increase / decrease the workflow of each operational stages.

Major Milestones

1. Data is vetted from these major sources:
 - Headcount
 - Sales Finance
 - Loan Level Detail
 - Treasury
 - MSR
2. Databases Interface into Power BI
3. Existing reports / Visualizations that are using Tableau has been replicated into Power BI
4. Deployment of FDS Cube using Power BI Service
5. FP & A Analysts are comfortable using the Power BI as a power user

5.3 Control Plan

The senior manager will provide the VP of FDS with a weekly update on how the project is progressing. Each FDS team would be responsible for keeping the senior manager up to date on their progress.

Data Control Plan



Each FDS Team must identify the type of data they are in charge of. This information must be validated, and the data owner must sign off on its accuracy.

- Identify what SQL table the data is stored.
- The refresh schedule of the SQL table.
- Role level security requirements.
- ETL process and schedule of the data into the Power BI Service
- The deliverable of the data to the end user

Requirements Control Plan

As the project progresses, the channel-specific requirements will need to be revised. Every requirement change must be subjected to a scope review, project schedule risk factors, and resource realignment. The department head will sign a change management form, and the VP of FDS will advise senior management to change the work breakdown structure and schedule as needed.

Schedule Control Plan

A Gantt chart will be used to track the schedule of the project. The FDS Team will have a specific data type they will be responsible for. Each data would follow the same waterfall structure:

1. Identify SQL table of data
2. Identify refresh schedule of data



3. Create workflow to model data into the Power BI service coinciding with the refresh schedule
4. Vet the data with existing data source from the FDS Cube on the SSAS
5. Replace the FDS Cube data source using the SSAS into the Power BI service
6. Department head of data owner to sign off on the accuracy of the structured data set from Power BI service.

Budget Control Plan

The FDS Team, as well as the Analysts, channels, and end users of the proposed Power BI service, are salaried, human resources are already fixed.

The only additional costs are the monthly license subscription for the Power BI Premium service and the cost of Power BI training for the FDS Team.

Because the FDS Team, as well as the Analysts, channels, and end users of the proposed Power BI service, are salaried, human resources are already fixed. The only additional costs are the monthly license subscription for the Power BI Premium service and the cost of Power BI training for the FDS Team.



5.4 Risk Management Plan

According to Nizhebetkiy (Nizhebetkiy, 2018), Risk Register is the most important document in project management. The pitfall is project managers will overcomplicate it. Below is a simple Risk Register for this project.

RISK DESCRIPTION	IMPACT DESCRIPTION	IMPACT LEVEL	PROBABILITY LEVEL	PRIORITY LEVEL	MITIGATION NOTES	OWNER
Give a brief summary of the risk.	What will happen if the risk is not mitigated or eliminated?	Rate 1 (LOW) to 5 (HIGH)	Rate 1 (LOW) to 5 (HIGH)	(IMPACT X PROBABILITY) Address the highest first.	What can be done to lower or eliminate the impact or probability?	Who's responsible?
Empower DB failure	Loan level data no longer available	5	1	5	Snapshot Table daily as backup	IT
Workday DB failure	Headcount data no longer available	5	1	5	Snapshot Table daily as backup	IT - HR
Altering business logic	Downstream effect on all reporting	3	5	15	Protocols in place for change management and signoffs by business leaders before change	Business Leaders - FDS
Power BI services failure	All reporting, datasets and dashboards will not be available	5	1	5	Service level agreement with Microsoft will be clearly defined of an acceptable loss of service and duration	Microsoft - FDS

KEY

5	5	10	15	20	25
4	4	8	12	16	20
3	3	6	9	12	15
2	2	4	6	8	10
1	1	2	3	4	5
	1	2	3	4	5

PROBABILITY

IMPACT

5.5 Closeout Plan

According to Ray (Ray, 2019), it is often forgotten the importance of closing out a project. The close of a project is the final phase of the job. There are 5 steps to close out a project.

1. Arrange a Post Mortem. Gathering the core team and invite honest feedback. Document the successes and failures of a project, building catalogs that offer historical data.



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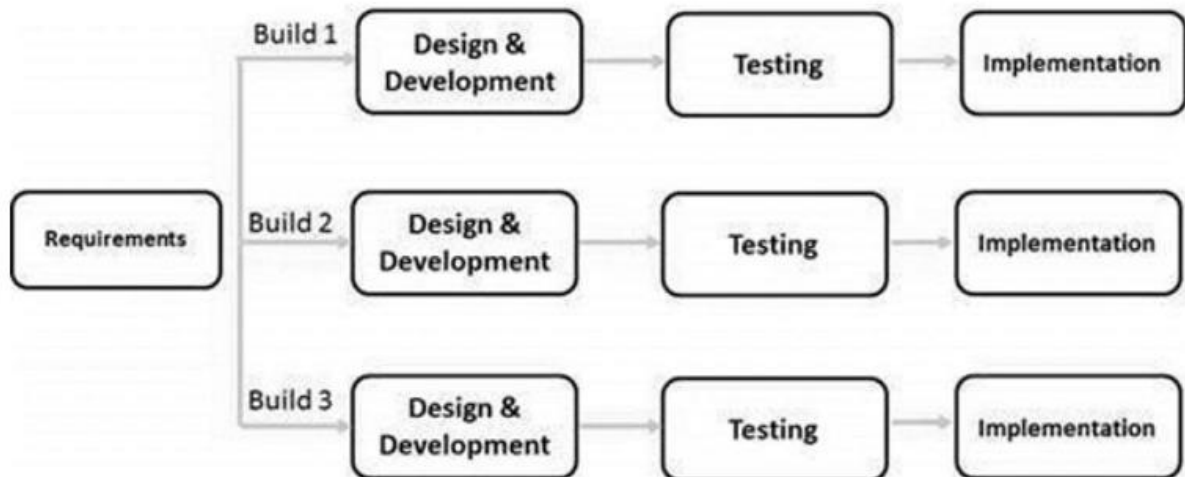
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2. Complete Paperwork. Documents that are needed for approvals from stakeholders, business leaders need to be complete and stored electronically.
3. Release Resources. Releasing internal and external resources that are involved in the project.
4. Archive Documents. There are lessons to be learned from this project that can be used for the next one. All paper trails should be neatly archived for posterity.
5. Celebrate Success. Acknowledging and rewarding the team for a job well done. This will plant a seed of trust and loyalty for future collaboration of project.

**Chapter 6****Technical Process Plans****Process Model**

The product development life cycle that this project will use the incremental model

**Figure 6 – Development Life Cycle**

Methods Tools and Techniques



6.1 Infrastructure Plan

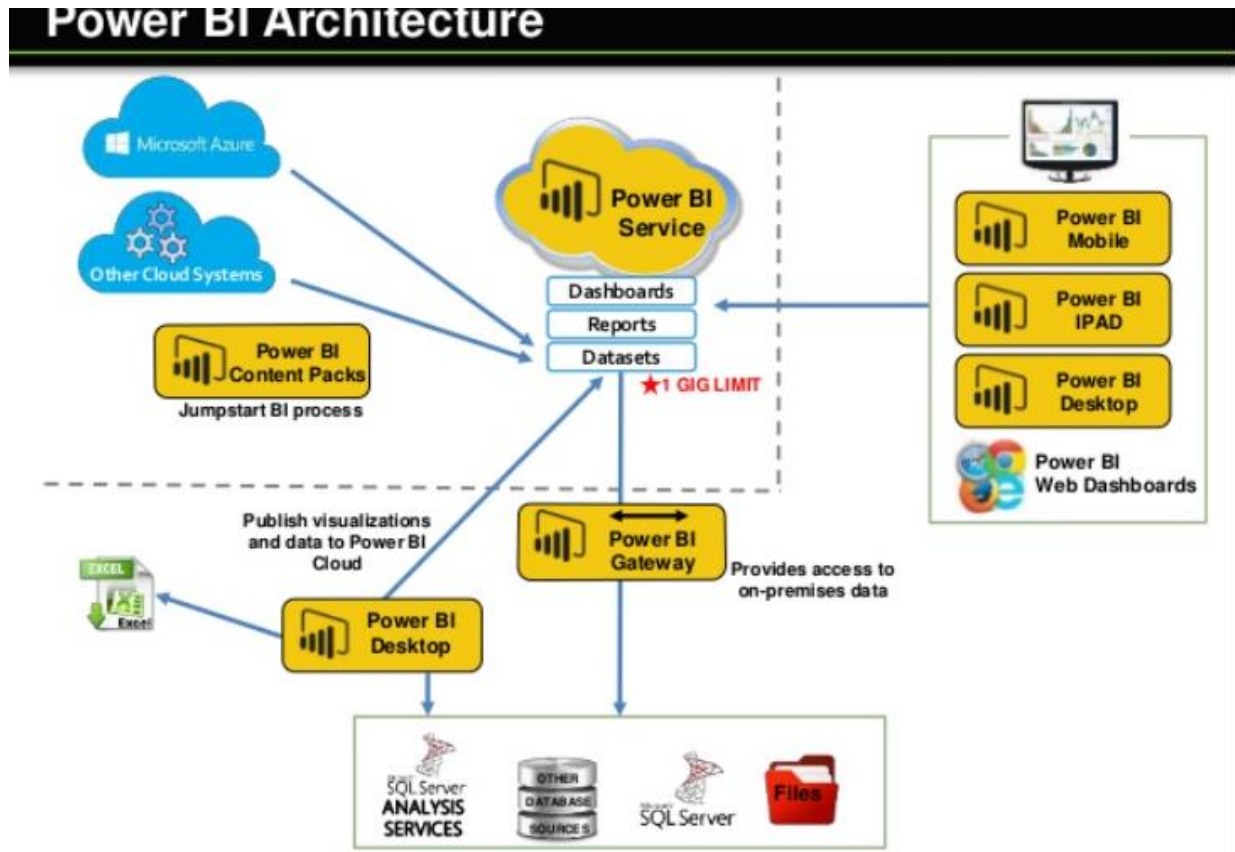


Figure 7 – PowerBI Architecture

IT Network and Infrastructure department must establish the PowerBI Gateway as well as ensure the licenses of all appropriate users.

Role level security will be used using AD

6.2 Technology Use Standards

The following table shows the required specifications with regards to systems:



Operating System	Windows 10
Browser	Chrome, Edge
Computer Terminals	Windows 10 OS, 4 GB Ram, 1024x768 Resolution
Software Requirement	Power BI Desktop, SSMS, Tabular Editor, MS Excel, Tableau
Internet	Broadband speed 20 MBPS

Table 5 – System Requirements

6.3 Deployment Plan

Every build will have a deployment and implementation because this is an iterative process. Before deployment and implementation, the department heads / data owners will sign off on each iteration. The most effective deployment plans, according to Bishop (Bishop, 2020), are implemented during initial deployment and throughout each stage.

Deployment Plan Steps

- Summarize Deployment goals – clarify scope of work and set the parameters for the project schedule. Set the target date and time to deploy.
- Document and Mitigate Risks – assign probability to each risk and impact. Then mitigate each risk by setting a safety net of staff or deployment schedule buffer.



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- Create Deployment Schedule – breakdown of production deployment into manageable tasks assign to specific team members. Every task must have a person assigned.
- List of Deployment Requirements – Identify resources needed to complete the deployment project.
- Establish a Deployment Communication Plan – clear communication to all who will be involved.



Chapter 7

Supporting Process Plans

7.1 Product Testing and Reviews Plan

The FDS Team will vet every build to the existing data set on the FDS Cube on the SSAS. The data must match, the refresh schedule is set, any reports tied to the data set can use the Power BI service as the data source. The department heads will sign off once these criteria are met.

7.2 Documentation and Work Plan

The senior manager will monitor and document the progress of the FDS Team. The FDS Core and SME will document all requirements received from the channels / data owners, as well as the data lineage of the data sets created based on the requirements. On the Power BI Service, the details of all SQL tables used to create the FDS Cube will be saved on a shared drive of the FDS Team

7.3 Subcontract Management (Acquisition Management) Plan

A subcontractor will not be used in this project.

**7.4 Process Improvement Plan**

With each incremental build, a better way to improve the data set is revealed. Extensive documentation on data lineage, refresh schedules, data owners, and determining what areas of improvement can be done after each milestone is required. Today's deliverables can transition from Excel to a Power BI document, and the FDS team will ensure a smooth transition.

**Chapter 8****Personnel/Staff Development Plan****8.1 Goals**

Every FDS Team member will be able to use Power BI and assist channels in extracting the standard data set for their specific needs.

8.2 Objectives

The FDS Team should be able to provide structured data sets from the Power BI service to the enterprise. They will discover how to Extract, Transfer, and Load data into a Power BI service. Learn how to create visually appealing visualizations and dashboards that will encourage decision makers to make data-driven decisions. They must also learn how to write strong DAX statements, which is the language used in Power Bi.

8.3 Procedures / Activities

The FDS Team will have an instructor lead course for Power BI that will last 8 weeks.

Week 1. Introduction to Power BI - learn its building blocks and various fundamental concepts.

Week 2. Power BI Desktop – extraction of data from various sources and establish connection to Power BI Desktop.



Week 3. Data Analysis Expressions (DAX) – the data coding language of Power BI

Week 4. Data Visualization – best practices of Data Visualizations such as charts, and creating custom visuals.

Week 5. Introduction to Power BI Q&A and Data Insights – create dashboards and publishing them into Power BI Services.

Week 6. Direct Connectivity – how to connect data sources directly to Azure, HD Spark and others to create interactive dashboards.

Week 7. Power BI Report Servers – understand Power BI Report Servers and Data Gateways. This includes learning to display and manage reports into a web portal.

Week 8. Advance Analytics in Power BI using R & Python – create R and Python visuals in Power BI Desktop as well as Power BI Service.

8.4 Performance Outcomes

Following training and certification, the FDS Team should be able to support the ETL process of all required enterprise data sets, load them into the Power BI service, and be the subject matter expert in how to help Analysts identify data sets, create reports, dashboards, and visualizations.



8.5 Timelines

According to Naybour (Naybour, 2014), the Gantt Chart is used to see which tasks can be done in parallel and which can be done sequentially. The Gantt Chart shows the project deliverable timetable.

Power BI Migration

loanDepot

Today's Date: 5/1/2021 Saturday
(vertical red line)

Project Lead: Mark Ligot

Start Date: 5/1/2021 Saturday

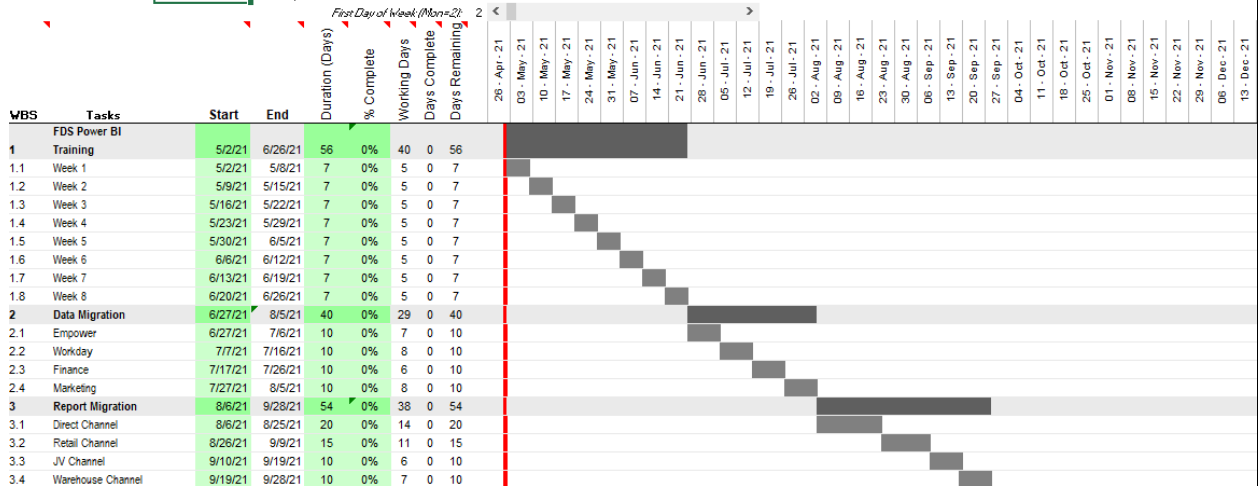


Figure 8 – Gantt Chart 1 of 2



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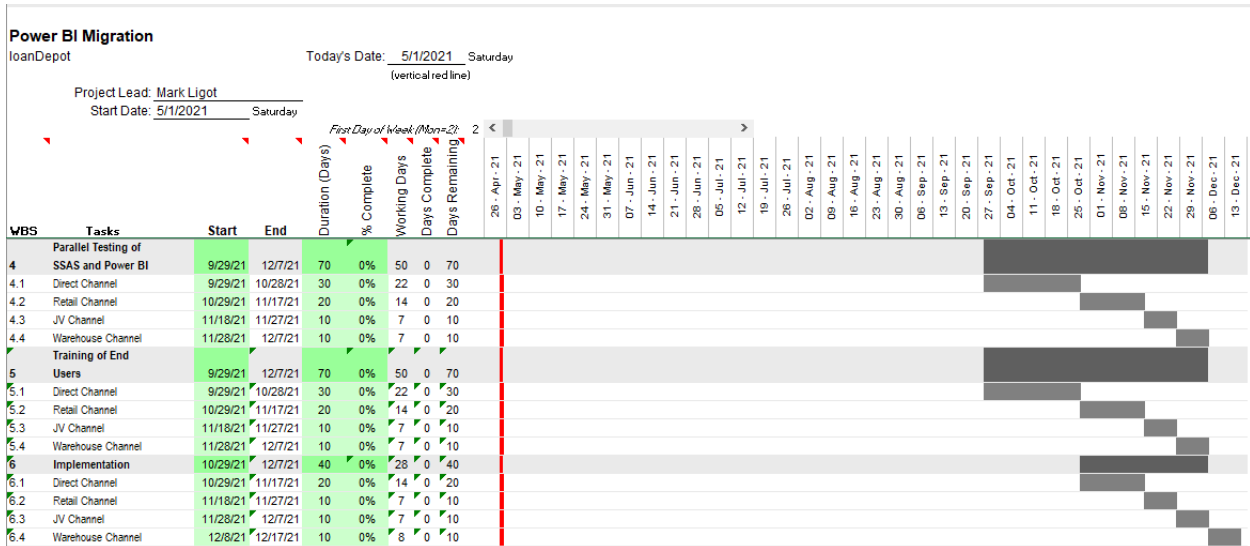


Figure 9 – Gantt Chart 2 of 2



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Appendix

Appendix A. Project Proposal

loanDepot

26642 Towne Centre Drive, Foothill Ranch, CA

Phone: 888-337-6888

Email: customercare@loandepot.com

Project Proposal: Implementation of the Power BI Premium Services to replace the existing

SSAS FDS Cube Platform

Description: Power BI Premium Services is a cloud-based Microsoft Platform that would act as an ETL tool as well as a deployment dataset platform.

Submitted to: Richard Calle

EVP, Chief Strategy Officer

Submitted by: Mark Ligot

Manager, Finance Data Strategy



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Appendix B. Profile of the Organization

Founded in 2010 by mortgage industry innovator Anthony Hsieh, our company is focused on creating a straightforward mortgage experience that meets—and exceeds—our customers’ expectations. Our company’s growth reflects the success of our customer-centric approach. In our first decade alone, we’ve grown to become the nation’s fifth largest retail mortgage lender and the second largest nonbank retail originator, funding more than \$275 billion since inception. Today our nationwide team of 9,000-plus members assists more than 27,000 customers each month.

Our Mission and Values

Our goal is to be the lender of choice for consumers and the employer of choice by being a company that operates on sound principles of exceptional value, ethics and transparency.

Ethics and Integrity - We employ uncompromised ethical standards demonstrating honesty and fairness in every action we take. We treat one another with respect and value each other's contributions.

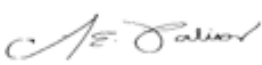
Taking Care of Our People - Employees are our most important assets and biggest competitive advantage. We celebrate successes and recognize achievement. We encourage feedback, suggestions and ideas to surface



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from anywhere within the organization. We appreciate multiple perspectives and diverse expertise.

**Appendix C. Language Editing Certificate**

Southville International School and Colleges College of Information Technology Language Editing Certificate Date: 5-22-2021 This is to certify that the independent project manuscript entitled FDS CUBE IN POWER BI PLATFORM prepared by MARK ANGELO LIGOT has been edited, proofread, and found to be complete and satisfactory with respect to writing mechanics and syntax by  ABIGAIL CHRISTINE ESTOESTA PALISOC, LPT, MA-ESL with license number 1211874 valid until December 2, 2023 This certificate serves as proof and is valid lest without the countersignature and curriculum vitae of the Certified Language Editor.
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Appendix D. Curriculum Vitae of Grammarian

ABIGAIL CHRISTINE ESTOESTA PALISOC

B2 L8 Ipil St, Manila Doctors Village

Almanza Uno, Las Piñas City

E-mail Address: abigailpalisoc0720@gmail.com

Contact Numbers: +639214998489 / (02) 802-11-51



OBJECTIVE

To pursue a highly rewarding career, seeking for a job in challenging and healthy work environment where I can utilize my skills and knowledge efficiently for the benefit of the company as well as for personal growth and professional advancement.

PERSONAL DATA

Age: 29 yrs. old
Gender: Female
Date of Birth: December 2, 1991
Place of Birth: Caloocan City
Marital Status: Married
Height: 5'2"
Weight: 99 lbs.
Religion: Born Again Christian
Nationality: Filipino
Language Spoken: English and Filipino

EDUCATIONAL BACKGROUND

Licensure Examination for Teachers – Board Passer

Graduate Studies **De La Salle University- Dasmaringas**
 DBB-B Dasmaringas, Cavite, Philippines
 4115 West Ave, Dasmaringas, Cavite
Master of Arts in English as a Second Language
 January 2020

Tertiary: **Colegio de Sta. Monica**
 98 Marcos Alvarez Ave, Talon Uno, Las Pinas City
Bachelor of Science in Education-Major in English
 (2008-2012)



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Secondary: **Las Piñas Golden Acres National High School**
Marcos Alvarez Ave. Golden Acres Talon 1, Las Piñas City
(2004-2008)

Primary: **Good Samaritan Christian School**
Quezon Ave, San Francisco Del Monte, Quezon City
(1998-2004)

MAJOR AWARD

Level

Year

➤ **Magna Cum Laude** **Tertiary** **2012**

SKILLS

- Fluent in English
- Good in making document reports
- Computer literate (Efficient in Microsoft Office)
- Excellent classroom management
- Creative lesson plan development
- Instructional technology
- Differentiated instruction

STRENGTHS

- Passion for continuous learning and personal growth.
- Highly motivated and driven with strong desire to excel.
- Good team leader and player and have excellent interaction skill to coordinate and work within a team

WORKING EXPERIENCE

- **English Language Teacher**
Ocean Edu Vietnam
Hanoi, Vietnam
May 4, 2021-present
- **English Professor**
Southville International School and Colleges
January 29-May 16, 2020
- **Señior High School English Teacher**
Golden Acres National High School-Senior High School



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July 1, 2017-January 6, 2020

- **Senior High School English Teacher**
Las Pinas City National Senior High School-CAA Campus
July 1, 2016-May 31, 2017
- **Junior High School English Teacher**
Captain Albert Aguilar National High School-Main
Las Piñas City
July 1, 2015-May 31, 2016
- **Primary English Teacher**
Blessed Trinity School
Silver cor. Silicon Roads, Pilar Village
Talon 1, Las Pinas City
June 6, 2013-March 30, 2015
- **Korean English Teacher**
OMC (Overseas Multilanguage Center)
Rm.403 4th floor A.B. Sandoval Bldg. Shaw Blvd cor.
Oranbo Drive, Pasig City, Philippines,1603
October 2, 2012-April 30, 2013
- **Online Korean English Teacher**
Kaigen Keed Language Center
Unit1209 Antel Global corporate Center
Pasig city, Philippines
July 16, 2012-September 28, 2012
- **Korean English Teacher**
LJ Learning Center Alabang
2nd Floor BMW Authozentrum Bldg., Commerce Avenue,
Madrigal Business Park, Ayala Alabang, Muntinlupa City
May 04, 2012-July 02, 2012

SEMINARS ATTENDED

-
- **International Research presenter of 15th Annual CamTESOL Conference**
Royal University of Cambodia
Phnom Penh, Cambodia
February 15-17, 2019



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- **International Research presenter of 16th Asia TEFL International Conference**
University of Macau
Macau
June 27-29, 2018
- **International Conference in Teaching and Learning English as a Second/Foreign**
Language in an Outcomes Based-Design
Institute of Social Order, Ateneo De Manila University
Dec.2-4, 2016
- **SHS Grade 11 Mass Training Workshop on Common/General Topics**
NEAP-NCR, Marikina City
September 27-30, 2016
- **Senior High School Grade 11 Mass Training of Teachers: K to 12 Program**
Philippine Normal University
May 27-June 12, 2016
- **1st International Conference on English Language Teaching**
Rajamangla University of Technology Thanyaburi, Thailand
May 13-15, 2016
- **National Seminar-Workshop in Language Teaching**
De La Salle University- Dasmariñas
April 20-22, 2015
- **Language, Culture, and Identity- Regional Seminar**
De La Salle University- Dasmariñas
August 17, 2013

MEMBERSHIP/ORGANIZATION

- Vice President, Philippine Center for Teachers' Continuing Education, INC (PCTCE)
- Member, Hong Kong Association for Applied Linguistics (HAAL)
- President, PEDAGOGY (Education Department) (2009-2010)
- President, STUDENT COUNCIL (Colegio De Sta. Monica) (2010-2011)

OTHER ACHIEVEMENTS

- **TESOL CERTIFIED holder**



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TESOL 150-hour program
Tesol Coach Master, Inc

- **Master's Degree**
MA in English as a Second Language
De La Salle University-Dasmariñas
- **Demonstration Teacher** in Regional Training
of Senior High School Grade 11 Teachers in Reading and Writing
Philippine Normal University

I hereby certify that above information is true and correct to the best of my knowledge.

A handwritten signature in cursive script, reading "A/E. Palisoc".

ABIGAIL CHRISTINE E. PALISOC



Appendix E. Turnitin Result

Turnitin Originality Report

Processed on: 25-May-2021 10:14 AM +08
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 Word Count: 4209
 Submitted: 1

Similarity Index

3%

Similarity by Source

Internet Sources: 1%
 Publications: 0%
 Student Papers: 1%

FDS CUBE IN POWER BI
 PLATFORM By Mark Angelo
 Ligot

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<https://www.educata.org/Product/Microsoft-Power-BI-Training->

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[Submitted to Oxford Brookes University on 2020-05-17](#)

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[Submitted to University of Wales Institute, Cardiff on 2016-05-15](#)

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[Submitted to La Trobe University on 2018-10-25](#)

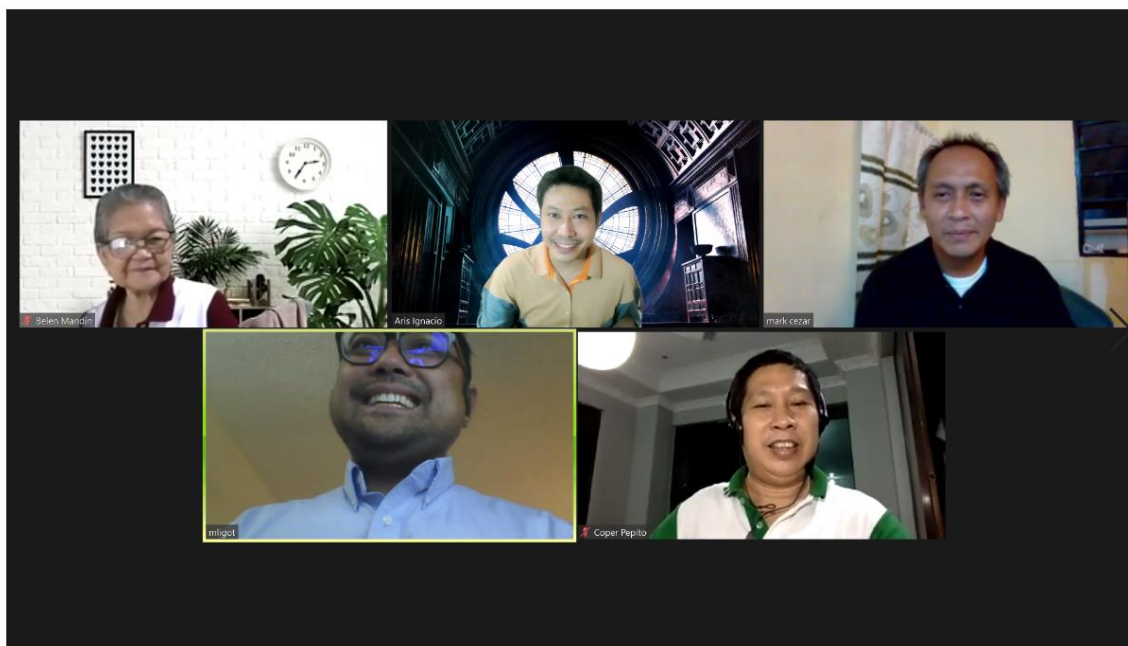
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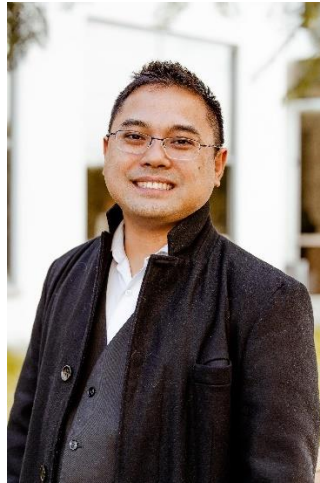
< 1% match (publications)

[Pro Power BI Desktop, 2016.](#)

EXECUTIVE SUMMARY The FDS (Finance Data Strategy) team at Loan Depot has expanded its scope to include data that is not related to finance. The FDS group's value proposition revolves around developing a data-driven strategy. Since its expansion, the FDS has incorporated data from areas other than finance, such as operations, sales, marketing, and human resources. As a result, the "FDS Cube" was created, combining enterprise data into a single repository source that exists on an on-premises SSAS architecture. The FDS identified the SQL table sources, extracted the required columns, transformed the data to channel driven business logic, and loaded it into an SSAS server, which serves as a deployment platform for structured datasets. This solution has given financial analysts the ability to pull data and incorporate hundreds of different data point dimensions, as well as business logic and complex formulas, without having to have the technical skills normally required to pull data, and the final output is in excel format, which is the preferred format for analysts. It can also be used in other programs such as Tableau and Power BI. The complexity of retrieving data from various data sources increases as the scope expands. Alteryx workflows have improved data-pulling management. They are properly scheduled and run; however, these jobs do not always run successfully. If any one of the jobs fails, it will have a cascading effect and jeopardize data integrity. Essentially, all jobs must run when they are supposed to and in the correct order. According to Reay (Reay, 2018), parallel processes are required to avoid a single point of failure. A sufficient amount of redundancy will prevent system-wide failures. The FDS Cube data set is currently hosted on an on-premises server. Massive influxes of query requests, both planned and unplanned

**Appendix F. Images from Oral Presentation**

From (L-R): Avelina Mandin, Aris Ignacio, Mark Anthony Cezar, Mark Angelo Ligot, Copernicus Pepito

**Appendix G. About the Author**

Mark Angelo Ligot has years of experience in conceptualizing, planning, and executing projects throughout his professional career. He has implemented an inventory management system for a major casino that saved over \$600K on the first year alone. Before that, he helped grow a small property management in London, remotely. He has published an android application that helps children with autism for his bachelor's thesis project and won the Most Innovative Thesis Award. He has a beautiful wife and has 2 kids, and they enjoy going to Newport Beach on weekends. Currently he works at loanDepot as the Manager of Finance Data Strategy, as well owns his own consulting firm Angelus Consulting LLC. More information can be found on his Linkedin profile

<https://www.linkedin.com/in/mark-ligot/>