
# Data and Information Governance

Performance Assessment - QCM1 Task 1: Data and Information Governance Banking Analysis

Danty Cook - 007003568

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WGU - D193

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# Introduction

As many of you are likely aware, there has recently been an economic downturn that has significantly impacted numerous small businesses, including our customers. In an effort to provide support to those who have been seriously affected by these events, the Department of the Treasury has introduced a new pilot program, known as the Small-Business Assistance Program (SBAP), as a precursor to an upcoming federal loan program with a broader reach. Here at Merrilton Bank, we have been granted the opportunity to be among the first to lead this new initiative.

Through the SBAP, we will be able to extend aid to both existing customers and potential new clients. Further, the SBAP is a renewable program, meaning that additional rounds of this loan program can be provided to businesses in the event the current situations continue to plague them. Not only this, but the SBAP will allow for the strengthen in market share and potentially open avenues for future market expansion.

The SBAP will likely undergo rigorous scrutiny from a variety of diverse sources, as one would anticipate with any federally funded program – especially one designed to act as a pilot program to resolve the current public financial crisis. Consequently55 spending. Mismanagement of the program could lead to the loss of eligibility for future federal loan programs, irreparable damage to the company's reputation, and potential additional adverse consequence.

To sum it up, as the late Stan Lee famously said, "With great power comes great responsibility." If initiative is to be taken, it is imperative that due diligence is exercised at all levels.

Having underscored the significance of meeting or exceeding the expectations set forth, as well as the potential risks associated with joining this program, it is now time to initiate the internal analysis regarding the likelihood of success.

The most critical factor for success will depend on the company's Data and Information Governance program. Data and Information Governance is best defined as...

> *"The organization and implementation of policies, procedures, structure, roles, and responsibilities which outline and enforce rules of engagement, decision rights, and accountabilities for effective management of information assets."*
>
> **– DMBOK, 2.0, DAMA Publication (2017)**

— Or more simply Data and Information Governance is “a required business capability if you want to get value from your data.” (Ladley, 2020, p. 17). By and large, Data and Information Governance are always an enterprise-level program. While it is possible to implement Data and Information Governance locally, it should never be treated as a one-off localized project with a finite start and end. A proper Data and Information Governance program should seamlessly integrate itself into all day-to-day operations, essentially becoming "just the way it's done."

To help facilitate the complete assimilation throughout the entirety of the organization, it is advised to deconstruct the Data and Information Governance program into its primary principles: People, Process, Technology, and Content. Once again for a clear understanding of the terms:

> The People component defines the accountability and responsibility factors of the program — this is the designation of roles, ownership, line of authority, accountability, and more.
>
> The Process component defines the capabilities and workflow of the program. More precisely, this component uses procedures and policies to define what the program does, how it is distributed, who is involved, how decisions are made, and how the program is enforced.
>
> The Technology component defines the technology and tools that will be used to support the Data and Information Governance program. This is not to be confused with the technology and tools utilized in the daily consumption and generation of data; these will be used to for the management, enforcement, and auditing of the data.
>
> The Content component, also known as the Data component, defines the understanding and management of the actual content, or data. In other words, this is where the data and its architecture are defined. The data architecture, more commonly referred to as the data landscape, can be defined simply as the history and inventory of the data — identifying where the data is, who uses it, how it's used, where it originates, who modified it, etc. Subsequently, as the data landscape is being developed, the data assets will begin to be defined, labeled, and documented, enabling oversight into the usage, movement, and integrity of the content.

Having established the foundational knowledge to a reasonable extent, the following section will cover the analysis.

# Analysis:

## Overview

To draft an analysis effectively, it is essential to ensure a shared and clear understanding of the company's current standing. To facilitate this mutual understanding, it is important to take time to review the case study prepared for this analysis. The case study offers a summarized, overview of the company's extensive history, current configuration, SBAP expectations, and other details. For your convenience, the case study has been attached to the end of this report.

However, while it succeeded in its goal to provide a more high-level outline, it regrettably appears to have omitted several relevant details necessary to provide an accurate and concise assessment. With expediency in mind, this analysis is being drafted with a certain level of presupposition regarding the current Data and Information Governance program in place, in order to establish an initial baseline for a constructive review.

These assumptions will be outlined in the following section. Therefore, it is requested that these assumptions are reviewed and taken into consideration during this analysis. If any of these assumptions are discovered to be missing or significantly incorrect, please prioritize addressing them above the conclusions of this report. These assumptions are crucial for an accurate assessment and should be promptly rectified.

## Assumptions:

First, it is assumed that there exists a certain level of executive support. Specifically, there is some degree of ownership and sponsorship for a robust Data and Information Governance program. At the very least, there should be an understanding of its importance, general support, and a defined direction for the implementation of such a program.

Second, it is assumed that, given this financial institution's successful operation in a highly competitive field for fifty years, there are both comprehensive and diverse operating and regulatory policies and standards currently in place. These policies have not only enabled the organization to conduct its business legally but have also fostered its growth, allowing for the expansion of market share, diversification, and market expansion. This is further demonstrated by the company's candidacy acceptance to lead a new federal loan program.

Third, building upon the second assumption, these standards apply to various aspects of the business and its operating models, encompassing areas such as organizational hierarchy, regulatory compliance, data and information management, data and information security, risk assessment and control, financial compliance, and audit and reporting compliance, among others.

Fourth, it can be assumed that there is a certain level of data and information governance practices in place concerning the methodologies and technology related to the company's data. The company has hired leading experts in the field of data science to develop, maintain, and expand its data and technological resources to support the smooth operation of daily business. It would be an affront not only to these eminent experts in their respective fields but also to the leadership that acquired them to assume that data, technology, and methodologies were not selected, crafted, and managed with the utmost care.

Fifth, it is assumed that the only ongoing projects and programs that have the potential to impact the details outlined are those described in the case study, see resources section.

Sixth, this analysis will be conducted without the constraint of capital expenditure. The case study does not suggest either the availability or unavailability of funds. Moreover, in an effort to provide an efficient and timely analysis, the costs of any recommendations and the precise methods for implementing these solutions will not be taken into consideration.

Once more, if any of these assumptions are found to be missing or significantly inaccurate, it is imperative to prioritize addressing them before the conclusions of this report. These assumptions are vital for ensuring an accurate assessment and should be promptly rectified. These assumptions not only serve as the bedrock for the Data and Information Governance program but also facilitate the development of a more streamlined and effective program.

## Current Program:

The assumptions outlined above serve a critical role in achieving a comprehensive enterprise-level perspective. They complement and complete the high-level overview provided by the case study, primarily addressing the most evident gaps in the case study. With these assumptions in mind, the analysis process can proceed with a baseline, allowing for a more focused critique. The analysis will be divided into the fundamental components of the Data and Information Governance program for clarity.

### People:

Currently, the company's operating model appears to be centered around functional silos. Departments function autonomously with their own governance and hierarchies that fit within business need. This is particularly true for the Business Analytics department and the Data Warehousing department.

As indicated in the case study, the Business Analytics department is responsible for managing data models, while the Data Warehousing department handles historical data. Both departments have a team of leading experts in their respective areas of expertise that have been cultivated and developed over the many years of operation. Securing specialist with these specific technical skills was not without its struggles.

This is not to say that the other departments are unimportant, nor do they not house their own experts. The IT department, Business Development department, Human Resources department, and Accounting departments all perform essential operations for the company.

### Processes:

Similar to the People component, the company operates the Data and Governance Process component with silo-centric decision-making. While the case study does not mention specifically mention any policies directly. It is possible to infer some policies, explicitly and implicitly, from what has been provided.

One such policy that is explicitly inferred is regarding the Data Models used to provide automation. The Data models are subject to regular routine evaluation to ensure statistical soundness. This statistical soundness has also been derived from previous standards and metrics designed by experts.

For the implicit inferred policies, this is where the need for the assumptions section demonstrates its relevance. As indicated above, for a financial institution to not only operate but to thrive and grow for a half century, implies that at the bare minimum some form of standardization and processes are being crafted and implemented. Not

only in the financial regulatory space but also from within the technological space. The latter being evident from the fact that experts within their fields were brought into design, develop, and maintain the machine-learning data models. It is assumed also although the technology may not be up to “bleeding-edge”, i.e., latest, standards it is within the codification defined at both the state and federal levels. This would include but not be limited to data security, data loss prevention, data retention, data standards, etc.

### Technology:

Analogously, the technology portion of the current Data and Information Governance program is also mainly inferred from the case study. Due to this, an assumption was generated to cover the topic with a broad perspective. Once again, it is presumed that since experts were acquired to create the data models that a certain level of data and information governance was consider in the creation of the central warehouse and siloed department data marts. As well as, to maintain compliance wcith regulatory requirements that data heritage, data security, data loss prevention, etc.

### Data:

In regards to the company’s Data component of the current Data and Information Governance program, the company has a data landscape that appears to be relatively simple in structure. This is not to say it is not adequate for current operating requirements.

The company’s data is captured from various sources and then stored in a centralized data warehouse. When the data is generated or captured, it is distributed into the different departmental data marts based on the role the data will fulfill, typically it is compartmentalized to the respective departments data marts with access typically only being managed by said department.

The Data Analytics department is solely responsible for managing all data related to the data models. This involves the requests for reports, running of the automation data models (fraud, creditworthiness, risk assessment, operational efficiency, data-drive decision making, etc.), the tunning of the data models for accuracy and soundness. The Data Warehousing department stores and manages all historical data captured, as this information is extremely vital to the operation of the data models.

The typical input stream of data comes from the internal consumption from standard daily operating tasks, such as transactional data, data model outputs, data model tuning, automation, etc. Other sources of data input come from documentation obtained from the local branch offices and input into the system. The typical output of the data would involve the generation of reports, transactional data, data model tuning and automation tasks.

The case study does not provide any details regarding the quality of the data, the data security, data access, and other similar items. Again, the use of assumptions are being applied to provide a general baseline regarding these details. Although, it is necessary to confirm these assumptions, it would not be presumptions to believe that the specialist obtained to build and run these systems did not implement some level of data security and data quality.

With that, the description of the current Data and Information Governance plan is concluded. In the next section, an analysis of the current program's shortcomings will be provided.

## Gaps:

Now that the current program's structure is understood, the next step is to start identifying areas for improvement. It is only appropriate to begin with a review of the previously generated assumptions used in the last section, as these assumptions were inherently created due to the limitations of the case study.

While the assumptions were employed to establish a baseline for the analysis and address the omitted details from the case study, it doesn't imply that they offered comprehensive coverage for the current program's structure. In fact, upon closer examination of the assumptions, a common variable emerges across several of them, which is the absence of clear documentation.

A seemingly minor issue can lead to a significant gap in the overall understanding of the current plan. The case study serves as a prime example of this. If the case study had offered clear documentation regarding the components of the current program, then roughly two-thirds of the assumptions would not have been required. Having clear and concise documentation is the lifeblood of any program.

Moving away from the high-level overview of the assumptions, let's begin breaking down each individual component of the Data and Information Governance program into their fundamental elements for further analysis.

### People:

To start, one of the primary gaps in the people component of the Data and Information Governance program is the presence of departmental silos. While compartmentalization of business functions is not inherently a negative approach to department management, it becomes problematic when it results in a loss of the company's overall vision and breakdowns in communication between departments. This is evident in the case study, where delays and impediments continue to hinder interactions between departments.

Another area of concern within the People component would be the lack of a clear ownership or hierarchy between the management and oversite of the departments. This was another area that led to the creation of an assumption for the baseline assessment. The departments are seen to be functioning successfully in an isolated environment, but not as well as a member of the team. One can assume that there must be a hierarchy internally for the teams to operate smoothly, but this hierarchy does not extend past the departmental silo.

Accountability is also significantly affected in this scenario. Without a clear line of authority, it becomes challenging to hold specific individuals or teams accountable for performance metrics, project deadlines, failures, and other responsibilities. Unfortunately, this is where we must address the first assumption made, executive-level support. Currently, the program does not provide any details regarding any level of executive support, accountability, or ownership. It is highly improbable that a successful enterprise like this would lack a Data and Information Governance program, but without clear documentation, it's not unreasonable to assume that some may believe there is no support.

## Process:

In the current Data and Information Governance program, the Process component is likely the primary source of many of the existing gaps. As previously mentioned, most of the issues have stemmed from the absence of clear and concise documentation. If there was an area where this is most evident, it would be here.

Segregation of business functionality is quite common, as it enhances the security and integrity of the components under direct control, reducing the risk of faults, failures, or other adverse outcomes. However, when this isolation leads to departments crafting their own rules and processes, conflicts and failures can start to arise. Many of the program's failures have occurred as a direct result of the lack of uniformity between all the departments. As the case study mentioned, there have been numerous issues with the integration of data and components between departments, as well as setbacks and faults in critical system tools.

## Technology:

In relation to the technology component of the current data and information governance program, unfortunately, the case study doesn't provide much information. This is where it became necessary to make an assumption regarding the current program. Similar to the process component of the current data information governance program, it was assumed that modern technology and tools were being used since they are being designed and developed by experts in their respective fields within each department. However, the need for such an assumption highlights another gap in the current program.

Furthermore, without standards being implemented across the enterprise, there is no guarantee that the tools and technology utilized are the same from one department to another. This once again highlights that the compartmentalized, ad-hoc nature of the departmental silos is more detrimental than supportive. It is understandable that each department may have its specific needs, but those needs must align with an overall governance for the entire enterprise. To ensure data integrity, security, and accountability, a certain level of standardization must be established for the technology used. This is especially crucial for a company in the financial sector, where data lineage and integrity are held to the utmost scrutiny.

## Data:

In theory, there are several methods to assess the data or content component of the data and information governance program for its soundness. This may involve an examination of data quality, an analysis of the data landscape, or an assessment of the effectiveness of the data and the current models and methodologies used by the company.

Likewise, the same lack of clarity from the case study pertains to the data component of the current plan. Thankfully, context clues can be extracted from the case study, just as with the other components. It is evident that there is isolation between departments, leading to a lack of

standardization and unnecessary challenges in the daily operation of the business. All of these issues could be easily addressed with clear and concise documentation of expectations and requirements across all areas of the business.

Once more, compartmentalization isn't inherently problematic as a way to run the company. However, all departments need to keep the full company vision in mind. As mentioned previously, the data standards assumed to be in place, developed by experts in their fields, are likely top-notch. Nonetheless, without documented standards, there is no guarantee that each department won't make modifications, resulting in unnecessary overhead. Moreover, without documentation of ownership and accountability, the likelihood of misalignment increases significantly. This can lead not only to data becoming non-uniform but also to a greater risk of data loss or compromise of data integrity.

The Case Study indeed lacks a complete data landscape for the company. A comprehensive data landscape is vital for effective operational planning and for a clear understanding of how and why data is being used within the company. Without this detailed data landscape, it's challenging to ensure data integrity, security, and accountability. It also hinders effective communication and collaboration between departments and personnel.

## Origins:

Before moving on to the potential solutions to the shortcomings discussed in the previous section, it is necessary that the theoretical history of said items be reviewed. Although, the primary purpose of this analysis is to provide a data-driven analysis of the current Data and Information Governance program and to provide constructive feedback regarding improvements that can be made to strengthen said program. It is necessary to understand that these origin stories are be labeled as 'theoretical' as the evidence to their existence is circumstantial and speculative, so please treat these as potential triggers that lead to the unknowing development of the above-mentioned gaps.

To start, most of these issues could be said to be the result of one major contributing factor, which is modernization. Although Modernization is an essential process that all businesses will continue to do as reliability as time will continue marching forward. If it is not handled effectively and efficiently, modernization can spell disaster for a company. The rapid change in technology and industry standards can easily cause a well running business to crumble. These changes cause massive pivots in the operating methodologies and priorities can lead many businesses into making abrupt, almost chaotic, modifications to the way they operate. Modernization can easily explain the development of departmental silos, communication issues, the lack of standardization, technological challenges, mishandling of data assets, and potentially many other items.

Next, the focus will be shifted more granularly into each core component of the Data and Information Governance program to explore other potential areas of concern.

### People:

As in the nature of any successful company, growth will occur. However, one side effect of any growing company is the potential for fragmentation to occur. As a company grows and ventures into new territory and/or expands its own market share. The issue with the fragmentation can start to develop into departmental silos.

With the development of departmental silos. This is when we also see issues with skills gaps and unnecessary competition is generated between departments. As well as communication break downs can occur.

### Processes:

Just as with the people component, during growth into new regions there becomes a need to add additional polices and processes to cover for new regulations. The expansion of the company's market also means that more processes need to be implemented to cover the new branches and offices.

With modernization, there comes new advancements in technology as well. These advancements generate new ways of thinking, methodologies, and changes in priorities based

on the growth in knowledge. Unfortunately, this causes some projects to become abandoned and/or backlogged causing the loss of revenue, resources, or loss of momentum.

### Technology:

As per its own definition, modernization means to bring the process into the modern error. With the rapid growth that occurred during the late 1900's, it is not unheard of that a company could update its technology just to end up being considered out of data by the time the project was completed.

### Data:

Regarding the data component, a potential fault of poor-quality data can arise from the efforts of a company to salvage a cancelled project. As a standard operating practice, one attempts to reclaim any potential assets from all operations conducted. Generally, this is a positive way to ensure maximum utilization of resources, but it does carry the risk of the collection of bad data, redundant data, and/or unnecessary data that is simply stored for the possibility of a use in the future. This also can occur due to the shift in priorities or as an adverse result from departmental siloing with differing processes and standards.

With this said, these are just a mere sampling of potential root causes for the gaps indicated in the previous section. In the next section, the analysis will continue one with recommendations on solutions to fix said gaps in the Data and Information Governance program.

## Solutions/Recommendations

With a review of the most significant gaps covered, it is now time to provide some recommendations or solutions to address the aforementioned gaps. Starting at the enterprise level, it is recommended that a "meeting of the minds" discussion be organized with all department heads and senior staff. This discussion should kickstart the process of thoroughly documenting the current Data and Information Governance program.

With that being said, it is recommended that each department head commence by documenting their own department's hierarchy, any current processes or standards they utilize, and any other essential information necessary for their department's operations. Subsequently, these hierarchies can be merged to create an enterprise-level hierarchy. This will not only address the communication issues but also resolve any confusion related to accountability and ownership.

The next step would be to review the processes and procedures between each department, identifying those that are closely aligned with each other and can be consolidated into an enterprise-level standard. Following that, any unique processes can be examined to determine if they closely align with processes in another department or if they can be adapted to become an enterprise-level standard applicable to all departments.

Once all the documentation has been completed, it's time to start fine-tuning each of the core components of the Data and Information Governance program.

### People:

Regarding the people component of the Data and Information Governance program, it is recommended that the company start by assigning the appropriate personnel to various program components, including data stewards, program managers, department managers, executive sponsors, and others. Each of these roles will play a crucial part in ensuring the effectiveness and sustainability of the Data and Information Governance program.

Data Stewards are individual(s) who have been assigned responsibility of a subset of data within their domain. Data Stewards assist in the identification, definition, and protection of the data they are charged with. These individual(s) will serve as the primary point of contact for their domain. Not only this, they will manage the data’s accessibility, confidentiality, quality, integrity, security, and help with the creation of processes and procedures.

From here, working up the chain of command, assigning program managers to oversee ongoing programs and ensure they are compliant with the Data and Information Governance program. Moving next through the department management to assign appropriate liaisons who will act as the owners of their domains and act as the managerial oversight to their domain’s data stewards. This will continue up to and including the senior management to provide assign ownership and sponsorship to the entire Data and Information Governance program.

Since the primary and majority of the focus thus far as been on proper documentation, it would be recommended that, at this point, to also begin documenting all internal processes as well, not just the ones dealing with standardization and data and information governance. Processes and procedures worth documenting would include items such as S.O.P.'s (Standard Operating Procedures), onboarding procedures, offboarding procedures, disaster prevention and data loss procedures, security requirements, certification/skill requirements, training documentation, and other similar items. By documenting all aspects of the business functions for each area and role within the company, the effort, cost, and time required to bring additional manpower into company or uptraining of personnel to fulfill gaps becomes less.

Finally, if it was not abundantly clear before, it is necessary that all departments are integrated and unified. This would include the departments that have not been consulted before in the past and/or have taken more passive roles. The Human Resources, Business Development, Accounting, and Information Technology departments needs to be included in all decisions.

## Processes:

As advised before, once all the documentation has been completed, the next step will be to go through all the current processes and procedures and begin standardizing them between all departments. Processes and Procedures are also going to need to be reviewed to confirm they are still effective and/or efficient and relevant to the current company vision. Not only this but they will also need to be verified to be relevant and in compliance with current laws and regulations and industry standards.

As recommended with the people component, it is going to become necessary to start incorporating and integrating all departments together to ensure an open communication and unified approach to the company vision instead of the siloed approach. All departments needs to be taken into consideration and clear communication channels need to be constructed between them. Decisions made that change processes need to be held in a formal manner with a meeting with all departmental heads and program managers.

It would also be recommended that several expert consultants be brought for consultation. For instance, soon, ISO 20022 will be put into implementation, and it would be necessary for our company to begin transitioning and working towards compliance to this new standard. Even more importantly, this new opportunity with the SBAP will be a first for our company (as indicated by the case study). It would be sensible to bring in a financial expert who has experience in dealing with Government based programs and their oversight requirements. At the very least, an expert within the loan domain space to consult regarding the application data model specifications, to determine the validity of the current methodology utilized for loan approval.

## Technology:

In regards to the Technology component of the current Data and Information Governance program, it is recommended that all hardware and software be reviewed to ensure validity. This review should take into account current industry standards in relation to security and regulation. It should also be concerned with the product's current life cycle, the software versions, patches and updates, utilization, etc. Any technology found to be outside of these parameters should be immediately remediated using the appropriate action.

There are specialized Data and Information Governance software and hardware available on the market, but it not necessarily a requirement. That being said, it would be within the company's best interests to review potential candidates for adoption. The use of technology and tools built specifically for Data and Information Governance company can help provide an advantage in regards to meeting compliance, guaranteeing data integrity, improved security, risk prevention, and data loss protection from both insider and external threats.

## Data/Content:

Much of the aspects of the data component for the Data and Information Governance program will be resolved with the completion of the components recommended in the processes section. With the integration of standards and policies across the board for the entire organization, issues with the data integration between departments should begin resolving themselves, as all will become aligned. As one may have noticed, this mainly applies to new data, so it will become necessary for old data to be brought up to the new standards as well. This unfortunately, will come at a cost, as both manpower and time will be needed to start updated the historical data to the new specifications.

Furthermore, as part of the documentation process a full data landscape needs to be generated. It is imperative for the company to have full understanding of its data usage. This means knowing where the data is coming from, how is it transported, how it is protected, what changes are made to it along the way, where is it stored, how is it used, who uses it, what is its lifecycle, and what is its linage. Understanding the full usage of the data will allow for the company to continue down the continual improvement process. Thus, ensuring that data becomes an asset that can be profitable, not a hinderance.

## Agenda Item Recommendations:

As indicated in the case study, this analysis will be of import to senior staff in an upcoming meeting, and thus several discussion points were provided with the request for feedback. So, with the conclusion of the analysis portion, it is now time to transition to the agenda itinerary recommendations. Please be aware that the agenda item recommendations below will be supplied with a working understanding of that the solutions provided in the analysis will have already started or will begin with this new SBAP.

Starting now with the company's current infrastructure. In light of all the necessary improvements that have been identified in the analysis above, it is recommended that the senior staff consider refinements to the existing infrastructure. It is recommended that a 'sterile environment' be created. This environment will help ensure that the company is successful in its endeavor to meet and/or exceed expectations for the new program, as well as work towards solving the existing data quality issues.

With the goal of creating a controlled, sanitized, and secure environment, it would be recommended to either acquire new hardware to be utilized only for the new program, reallocate existing hardware, or a mixture of both. Preferably, the acquisition of new hardware would be the best route, since the hardware's life cycle will be optimal, the firmware and software, as well as security and vulnerability patches, will be up to date, and the specifications can be built in accordance with predictions to the scope of the new program.

The primary function of this hardware is to create isolation between the new program data and all other data. This isolation could be made via physical separation with the use of new hardware or logically from within the existing hardware. Regardless of the method, the data storage needs to be of the program data only.

The next recommendation is essentially the same as the first, however this data storage will be utilized for the data that is being updated and standardized from the old historical data. This data storage will be where new customer data is input and where old historical data is saved once it has been updated, standardized, and passed the new quality specifications. Again, this data should be isolated either logically or physically from all other assets.

The reason for isolation is to help ensure that the data's quality will be maintained. Furthermore, by isolating the data, the company can ensure the new regulatory and compliance requirements for the SBAP are met. This is not the only benefit to isolation, this benefit includes the ability to defend against both internal and external security and vulnerability threats, to provide a higher standard of integrity guarantee, and provide more concise methods of data loss protection and prevention.

Unfortunately, with this new configuration, there may need to be some necessary changes to the tools utilized during the day-to-day operation of the business. There may even be a need for a temporary duplication of some of the data models that are utilized by the company, if they cannot be configured to utilize multiple input sources, such as the fraud detection model, loan approval data model, etc. So, it'll be necessary to bring in the appropriate domain experts and or data stewards to address this concern.

Speaking of the Data model configuration, it may be necessary to adjust the parameters that the loan application data model utilizes. In an ideal world, working with the assumption that the future will look like the past should still be consider relevant even when the current economic crisis is taken into consideration. The logic behind this theory is that the new Loan program offers the ability for a business to balance their accounts, pay off any delinquent debts, restock inventory, and rehire their employee base that may have been dismissed. Not only this but also securing some future financial security. However, the reality is quite often not the same as the way it is described on paper when these programs are created.

It is with our customers best interest in mind, that it is recommended that our data models for loan application approval for this new program be evaluated for validity and sufficiency. It may be necessary for the data model to go through several iterations and reevaluations very quickly at the launch of the program. It also would not hurt for potentially a Financial Consultant to be brought in who may have experience with situations such as the one we are currently facing. At the very least Consulting with our government liaison for the new program to see what metrics or background data they may have regarding similar programs to use as a baseline for the creation of a new model.

Moving now to which department or unit will handle the new program. Taking into consideration the importance and scope of this new program it would be advised to create a new unit that would specifically handle all SBAP related items. Furthermore, this unit will work hand in hand with the newly redefined members of the data and information governance program as well as other department heads. This unit will act as the point of contact, both internally and externally for this new program. Roles should be assigned to unit members to handle all reporting to the Department of Treasury and oversight committees. This this unit will also routinely perform audits and data validation checks. As well as handle any external requested audits and field any inquiries regarding the new program.

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# Resources

# Case Study

# Merrilton Bank Case Study

Overview

Merrilton Bank provides lending and insurance services to approximately 25,000 commercial and individual customers. Its main mission is to provide a wide spectrum of financial products tailored to the needs of diverse populations and small businesses. The bank was established in 1972 and has accumulated various data sets on the lending, repayment, and fraudulent behaviors of customers. These data have been used to develop various risk models assessing the likelihood of loan repayment, expected loss, and risks related to the company's products. The credit assessment, risk prediction, and fraud detection models are valuable data assets of the organization that are used to automate parts of or entire business processes. These models comprise prominent data-driven decision tools behind the cloud-native mobile app that Merrilton is developing to provide its services to all customers anywhere and anytime.

Before the statistical scoring models were used for automatic loan decisioning, the bank used subjective scoring that relied on the input of experts. When the first predictive models were built, experts were also used to train these machine-learning-based models. The current automated application scoring models are deemed empirical and statistically valid. They have undergone rigorous statistical analyses that derive empirical ways to evaluate the creditworthiness of consumers using data from applicants within a reasonable preceding period, and the models have been developed and validated based on generally accepted statistical practices and methodologies. All models that are in use are reevaluated for statistical soundness on a periodic basis and adjusted, as necessary, to maintain or increase their predictive power.

The application scoring models focus on selecting borrowers for approval from a pool of applicants. The bank has found that the automated application scoring solution has several benefits, including operational efficiency gains, improved accuracy of decisions, the establishment of an objective and standardized data-driven decision-making culture, and customer satisfaction improvement, to name a few.

The implementation of the automated application scoring models was not without challenges. The process has been a costly and complicated undertaking and initially required data scientists with specific technical skills, who were not easy to find. The bank needed to revisit how its data was stored and managed to support the models under development. The model's prediction capabilities were based on historical data with the stipulation that the future will be based on and will look like the past.

At present, the models are managed by the Business Analytics department, and the historical data are managed by the Data Warehousing department. The IT department supports the various technical needs of both the Business Analytics and the Data Warehousing departmental silos but does not influence the policies and procedures of these two departments, as they each have their own sets of policies and procedures. Merrilton currently operates in departmental silos as well, using a highly centralized data warehouse with several data marts supporting specific departments, including one for Business Analytics. Issues in integrating data from various sources continue to present impediments to data integration and model development and calibration. Elements of data governance related to people, processes, content, and technology exist across many of these

departments but do not appear standardized or synchronized and experience frequent ad-hoc changes. Furthermore, these departmental silos also provide centralized services, such as IT, professional development, accounting, and human resources (HR), but they are rarely used in decision - or policy making at the enterprise level.

Current Crisis

During the past few weeks, an economic downturn affected many of the bank's commercial customers, causing some businesses to temporarily close. As a result, Merrilton bank was entrusted by the Department of the Treasury to administer an expedited portion of a federal loan program, the Small-Business Assistance Program (SBAP), to support affected small businesses. The Department of Treasury will be supported by several oversight organizations in ensuring transparency and accountability of the program spending. Standardized data from loan operators are being collected and published on a government website.

Merrilton Bank is still assessing the specific needs for people, technology, processes, and data to support this loan program and ensure that the bank will remain compliant with the requirements of the Department of Treasury so that it can be eligible to administer any future portions of the federal loan program and to avoid consequences from mismanagement of the federal program.

To apply for a SBAP loan, a business is required to apply for the loan directly at a bank operating a portion of the loan program using a paper form or via a web portal and provide a small set of operational indicators, including industry sector, income lost per day due to closure, number of employees affected, years in business, and annual profits from the past calendar year. Traditionally when a loan application is submitted, 20 questions are included in the data collection process; however, the federal data for this emergency loan product only requires five of these questions. While the credit models that Merrilton currently uses require the same federal data as the emergency loan product, they also rely on additional variables that the emergency loan program does not require.

The Department of Treasury requires that the loan operator ensures the confidentiality of the data collected about the loan, maintains systems for data preservation and potential audits, and ensures compliance with all applicable laws and regulations.

The SBAP is a renewable program. Should the situation continue to affect businesses, Merrilton would be able to administer successive rounds of the loan program provided that the bank satisfies specified thresholds regarding service levels, engagement, diversity in the spectrum of small businesses awarded, and initial repayment levels, as well as compliance with associated rules and requirements. One of the requirements specifies the level of the two-month repayment rate and for the bank to give out loans equitably. The bank is expected to provide periodic reporting to the Department of Treasury by sharing data on the operations of these loans using open data standards as defined by the National Institute of Standards and Technology (NIST) and make additional data available for ad hoc audits.

Merrilton Bank is expected to report the number of SBAP loans in default status, a default rate threshold across business size or earning bands, and a diversity distribution profile on the small businesses that have been issued a loan. To meet some of those requirements, the bank will need to collect data available only at local offices and from different local offices and establish key performance indicators to share with the Department of Treasury

periodically when audited. The bank is considering using cloud computing to increase storage efficiency and availability of large spending data sets.

Merrilton is responsible for discovering and mitigating fraud and abuse and reporting such instances to the loan originator. Fraud detection tools have already been constructed and are in use by the bank, but they require the collection of multiple additional data on the history and the behavior of the loan recipients.

A small business will be eligible for another round of SBAP loans if it does not default on the initial two-month repayment of the current round of loans and when it has rehired at least 50% of laid-off employees.

Next Steps

Merrilton's leadership has asked a group of employees to survey the people, procedures, technology, and processes they use in their respective departments for possible deployment in support of the new SBAP program. The executives are meeting tomorrow to agree on the next steps in the establishment of the new unit. The following agenda items will be discussed:

1. Whether to establish a new unit that specializes in SBAP only or to assign a current unit to support the program
2. Which unit will handle reporting to the Department of Treasury and validate reports
3. Reuse of existing infrastructure to support SBAP-related activities
4. The need for additional infrastructure to support the new loan program
5. If current tools for data collection, storage, and analytics should be used to support the operation of SBAP
6. Updating current loan application evaluation models
7. Risks from updating existing models on default rate and eligibility for the next round the federal program
8. The criticality of SBAP data and storage modality solutions
9. Disaster recovery consideration of SBAP-related data
10. Applicable laws around the collection and use of SBAP data and compliance
11. Other observations