DePaul University

College of Computing and Digital Media

IS 550 ENTERPRISE DATA MANAGEMENT

Group Project Part 1

CASE STUDY – MASTER DATA AT VERT PRODUCTS

Project Team

Robert Samawi
Deepanjan Rane
William Roche

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Executive Summary

The given case study on Master Data at Vert Product is about the master data that is been used at the organization. The organization is in business for a little more than 20 years and are specialized in sourcing and distribution of green products. The organization is now expanding and facing challenges with managing its data. The Product Master database used by Vert company has three main limitations: limited data entry capabilities, trust issues with the database being edited by 50 people, a Windows-based application reaching its storage limit, and frequent crashing of the system. The crashing of windows applications that are responsible for data management is costing Vert a loss of money and efficiency. To improve the database, Vert can develop data governance within the company to manage the database and set format rules for users. Moving towards a cloud-based application will also provide unlimited storage capacity and better interoperability. However, these solutions come with costs and time consumption.

Vert's customer data management is also poor, with 80% of records having quality issues and different databases used for different divisions. To improve, Vert can perform data quality analysis, implement metadata management, and develop one model for collecting customer data that will be used by the whole business to maintain standards across the organization. This will limit the mistakes when accessing or modifying customer data.

Vert is also facing risks with poor data quality leading to inaccurate marketing campaigns and cybersecurity risks from the use of offline spreadsheets. These risks can lead to exposing sensitive data, cyberattacks, and a loss of customer trust and efficiency. With over 50 people accessing the data it is prone to 50 hack attempts which can also compromise customers' data. There are many business implications due to the current state, exposing customer and company sensitive data, potential hack attempts, corruption of database, and loss of data including temporarily stored data are a few of the implications that can happen to Vert and will cause them tremendous damage.

Implementation of data governance is a key priority to manage data properly for Vert. Educating its staff will add more helpful to follow best practices, rules on how to handle data, its limitations, and accessibility and shareability for smooth operations of the database.

Limitations and Improvements of the Product Master Database

1) What would you recommend Vert do to address the limitations related to the Product Master? What are the benefits of your recommended actions? What are the risks associated with your recommendation?

Limitations. The Product master database has 3 main limitations, the first one being that the data employees can enter is limited. Some attributes of products can't be added to the database, forcing employees to use offline spreadsheets to keep the information. Examples of these attributes are the following: Forest Stewardship Council approval indicator, and the Energy Star Rating. A second limitation is that 50 people can edit the database making it impossible for the employees to trust the information it contains. Another limitation of the Product Master database is that it was built on a Windows-based application, and it is quickly reaching its storage limit and has crashed several times in the past few months. These crashes make the company lose a lot of time and therefore money and decrease employee satisfaction.

Recommendations. A solution to the first 2 limitations would be to develop data governance within the company. A team must be given the responsibility to manage the Product Master database and this team must edit the database to define the new attributes required for products and delete the attributes that are not relevant. Also, the team responsible for managing the Product Master Database must create format rules that will allow users to only add values that correspond to a specific format. An example of a format is the Data format. In the case of the company, the format of the UPC code attribute must be changed from 10 digits to 14 digits. Finally, the team will be responsible for validating changes in the database. Employees will send edit requests and the team responsible for data quality will evaluate and validate or not the requests.

Another recommendation we would give to our client is to change from a Windows Based Application to a Cloud-Based Application.

Benefits:

The benefits of giving responsibility for the management of the Product Master database are that it will allow the company to have only one database instead of multiple offline spreadsheets and it will provide a single source of truth concerning product information that the 4 divisions will rely on.

The benefit of moving towards the cloud is that it will allow the company to have unlimited storage capacity and considerably reduce the risk of crashes. Furthermore, moving towards the cloud will allow better interoperability between the different applications the company uses.

Risks:

Finally, the main risk related to our recommendations is the cost of these solutions. Moving a database to the cloud can be very costly and time-consuming. Concerning the development of data governance, this solution will require the hiring of many talents and the training of the employees.

Best Practices Regarding Managing Customer Data

2) What are some best practices regarding managing customer data that you would recommend to Vert? Be specific in your response. That is, clearly articulate how the best practice listed relates to the specific situation or issues at Vert.

The Marketing team tested the quality of customer data and found 80% of the records had some sort of quality issue. There are also multiple records for each customer and the data about a customer often is different; depending on which database the customer information was pulled from. The divisions are not consistent in what data they collect from a customer and the data validations are inconsistent across divisions.

To combat this, I would suggest performing a data quality analysis. This assessment will provide insight into existing issues and obstacles, as well as the impact and risks associated with poor data quality. This way we'll have the ability to contribute to improved business performance by making the data more valuable. We also need Metadata Management; in which we will establish a data glossary to define and locate data in the organization; ensuring the wide range of other Metadata is managed and made available to the organization.

But what is going to positively impact the organization is; developing one model for collecting customer data that will be used for the whole business. Now data is dispersed in different databases and that's making the data quality of customers unreliable. By consolidating all the customer data into one database you are essentially setting up a one-stop shop for all the customer's information. This will limit mistakes when accessing or modifying customer data. To do this we will need to clean the existing data, and then add it to a new database.

Risk and Potential Business Implications of Current Data Management at Vert

3) What risks do you see related to how Vert is currently managing their data? What are the potential business implications of any risks identified?

Vert is currently dealing with vulnerabilities. Many defects in their system allow it to be successfully hacked and compromised - essentially a hole in the organization's defenses. Right now, some of the exploits are:

- Poor data quality → Marketing campaign not accurate because of the inaccurate target. Data is not an asset if it is not of quality
- Cybersecurity risks (offline spreadsheets) → risk for ransomware or risk to the reputation in case of a cyberattack

Business Implications:

Some business implications would be exposing the company and customer-sensitive data. Offline spreadsheets are being used and this is leaving the company in jeopardy. With 50 different people having access to the site at different times; you are opening yourself up for 50 more hack attempts; and potentially something else going wrong in the database. If customers' information gets compromised, then they will stop doing business with Vert. All it takes is one bad press release or social media post that will send the business of Vert downhill. There are also many crashes occurring due to Windows-based applications used. This leaves the business on hold and causes a loss of money and efficiency. This will also

affect the people working at Vert, as they will constantly be part of the mess after mess. Company culture is so important and if the employees aren't satisfied, they will leave. Other business implications include corruption of database index or data pages, loss of a database, including the DBMS Master Database temporary storage database, etc. This will likely occur if the systems keep crashing the way they have been. It can take that one catastrophic crash that will set the company back beyond its wildest imagination. This will halt the business as a whole and cause a lack of production.

Business Process and Data Architecture Design to Implement

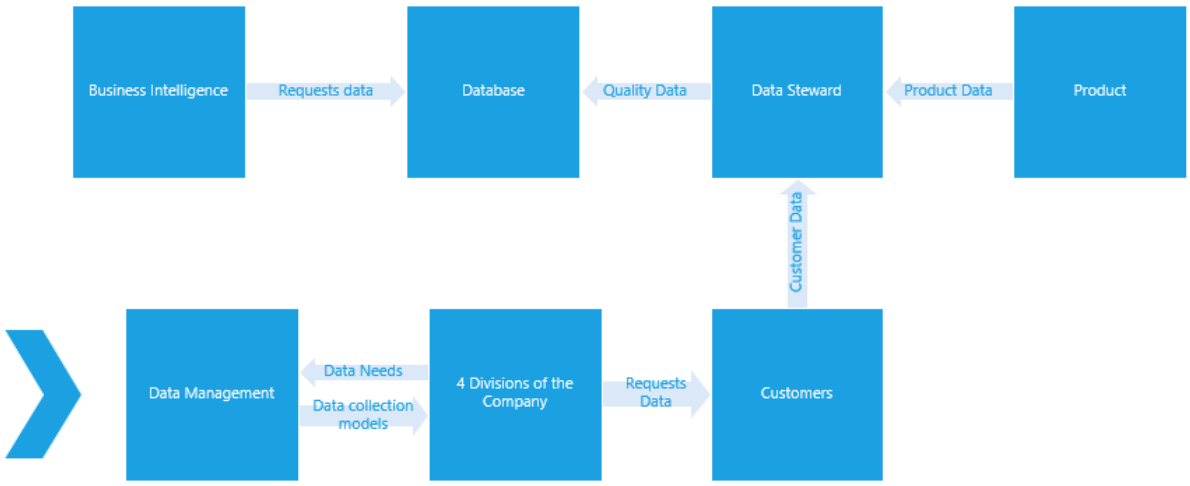
4) What business process and data architecture design would you propose (high-level) to address the concerns shared? In addition, to a written explanation, please include a diagram to illustrate your thoughts.

The first thing the company should do is to develop Data Governance to ensure that data is managed properly. This process involves multiple actions to take, among them a recruitment process to hire the right talents, but also developing a Data Governance strategy and best practices.

Then the company must lead an internal data management/data security campaign to educate its employees on the best practices to adopt when dealing with customer and product data. Rules need to be set on how to manage data, where to store it, and what can be shared and how.

Finally, another process that needs to occur is a transition from Windows Based Applications to Cloud Based Applications. This process will require talents to manage the transition, maybe consultants. However, it will be beneficial for the company in the long term as it will allow unlimited storage, reduce crashes, and improve interoperability between the company's apps.

If we were to focus on a design, we would present the following design to the company.



This process was developed to improve the quality of data at Vert Products. The first step of the process is the definition of the data requirements, what data do the 4 divisions of the

company want? Then the data management department creates data collection models to have the same information on every client or product, the information gathered won't depend on the divisions anymore. After that, customer and product data are collected and validated by a data steward that guarantees data quality within the databases. Finally, the business intelligence department will have read access to the database and will draw client and product insights to help decision-making within the company.