Business Intelligence Initiative

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Abstract

This MQP, prepared for The Hanover Insurance Group, describes the prototype of a newly developed system designed to collaborate with the efforts of the Business Intelligence Strategy at Hanover. The requirements and necessary business process flows included in the system were gathered through interviews with Hanover employees and from report creation documentation kept by the Management Information Systems (MIS) team at Hanover. The newly developed system provides information for the MIS team at Hanover on commonalities on data manipulation to facilitate the transition to automated reporting procedures, mitigating the risk from high-touch processing and human errors. The system also provides the Hanover employees with simplified procedures to extract the necessary data for their reports. A prototype of the system was built in MS Access supplemented by wiki pages for demonstration purposes.

Background

Hanover was implementing a Business Intelligence Initiative to reduce risk by making reporting tasks more efficient. The vision of the initiative is, "To Provide accurate, timely and pertinent information, in an efficient manner, to improve analysis and inform decision making of business leaders." (Harris, 2011)

The main objectives of the Business Intelligence Initiative were (1) to create enterprise alignment and clarity, (2) institutionalize a collaborative, cross-functional Business Intelligence Community, (3) identify high impact, value added investments that clearly align and support business priorities, and (4) identify and quantify current business opportunities that have clear efficiency payback.

Hanover employees are utilizing various data stores to extract the data they need in order to produce various reports across the organization. Most of the data that is currently being used is being extracted by various employees in different areas, creating data redundancy. Hanover employees utilize multiple data sources because the information they find in one of the sources is incomplete, inaccurate, or some of the systems are not updated regularly enough for their reports.

Due to the complexity of the process, many of the business reports require a high-touch process to create them. Some of the reports take days or weeks to be crated, and there is a big change for human error or data inaccuracies because of all the data manipulation that each report involves.

Cost Benefit Analysis

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Break Even Point	6 months
Return on Investment	335.43%
Net Present Value	$177,230
5-year Cumulative Net Cash Flow	$205,080

Project Goals/Objectives

- Document various business processes throughout multiple departments at Hanover – mostly ones that produce reports and were pulling data from data stores and using that data in a meaningful way.
- Design a system that achieves multiple functionalities: (1) Hold the numerous pieces of data from the documentation and (2) organize the information on the data sources such that the information has the capability to be searched in a variety of ways.
- In addition to making the data available to the Business Intelligence and MIS teams at Hanover for querying and editing; also make certain aspects of the data available to the various employees at Hanover. The employees need to know if any aspect of their process changes.

Methods/Process

1) Interview with business users – Use prep form to guide discussions
2) Utilize meeting notes and prep form to create data flow diagrams for each process documented
3) Send back diagram to process representative to verify information
4) Once all processes were documented, used them and data flows for requirements gathering
5) Constructed first entity-relationship diagram to visualize how the database would look
6) Revised ERD based on Kim Killeen's feedback/advice – used to implement database
7) Input data into prototype of system
8) Test sample queries and reports in order to portray collected information in a meaningful way for management at Hanover
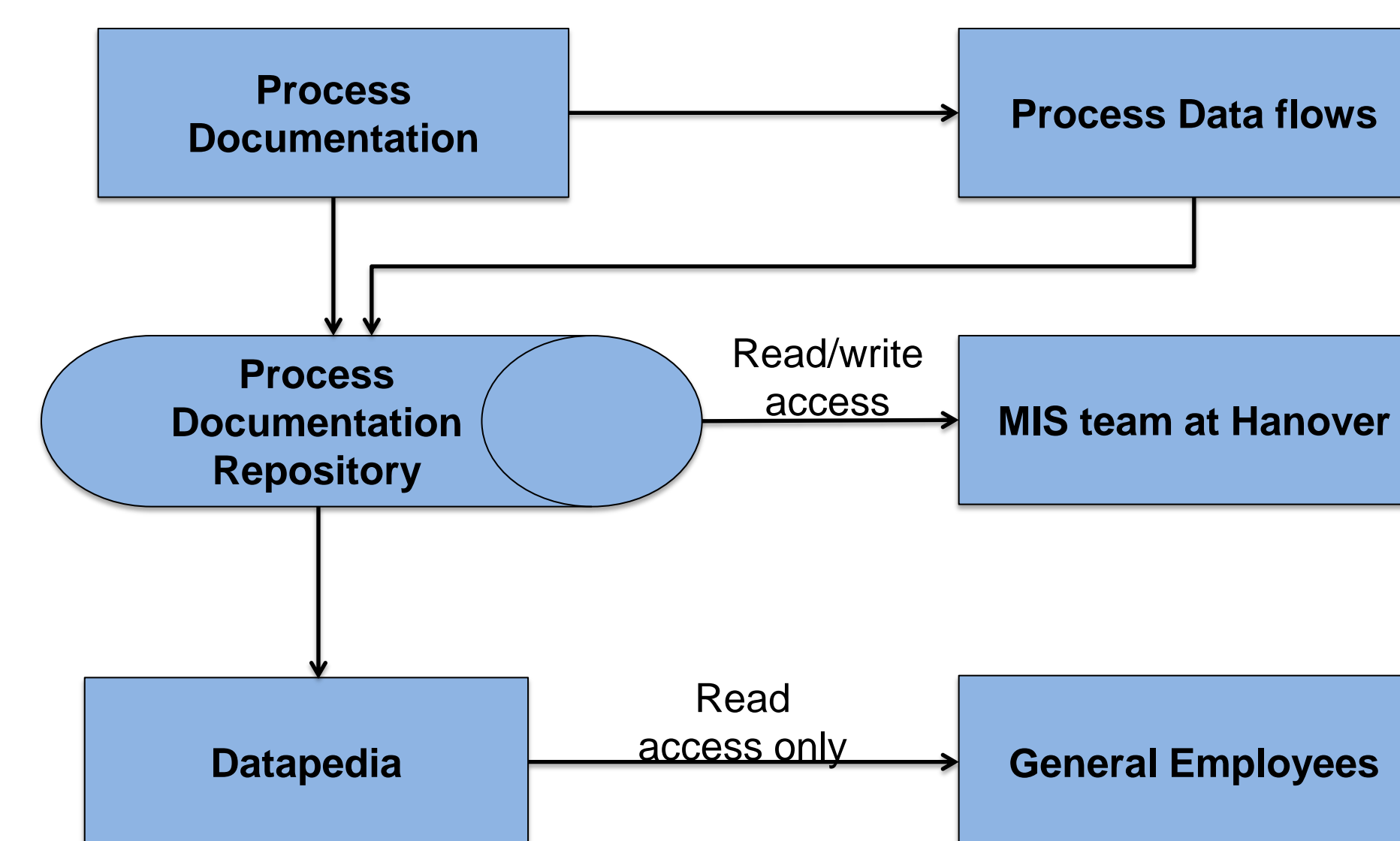
Entity-Relationship Diagram
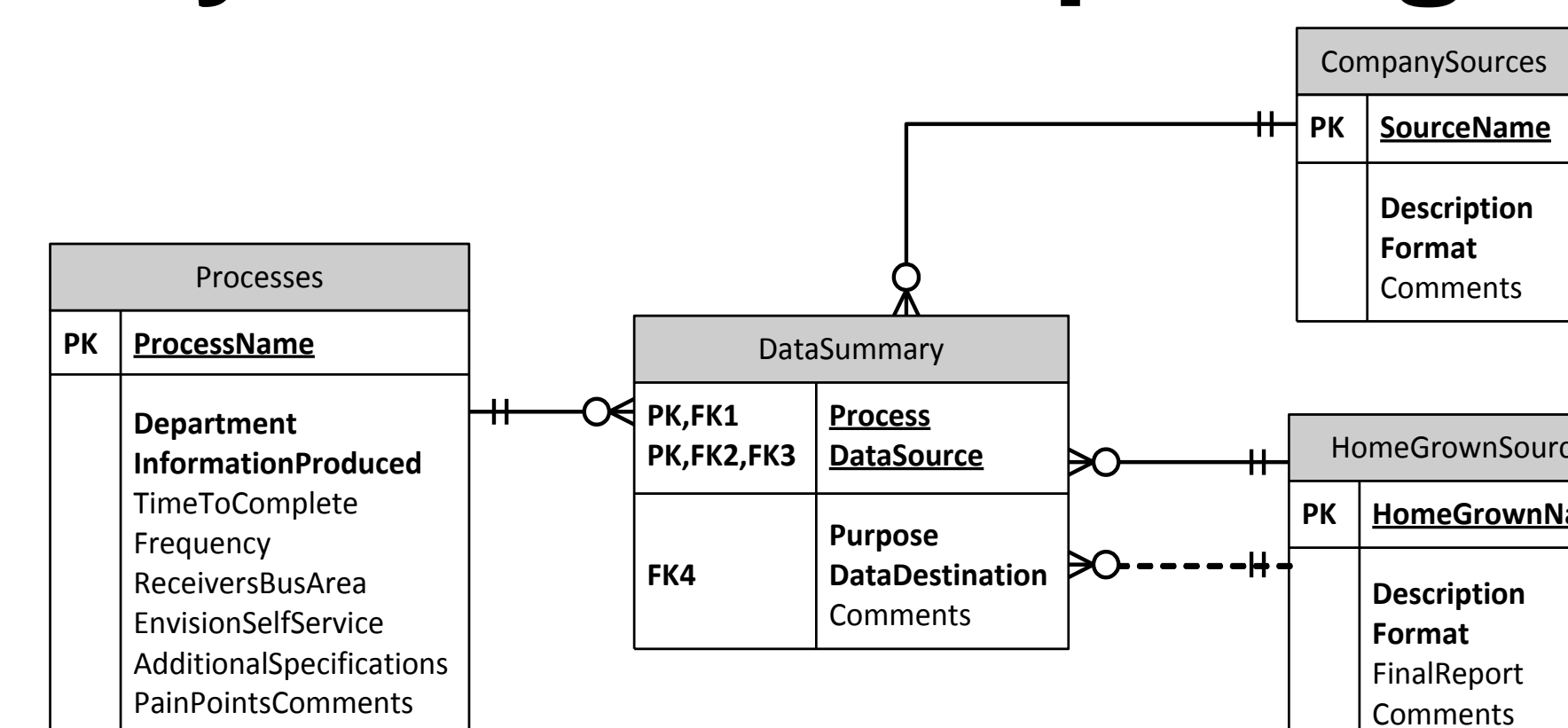
System Requirements

Process-oriented	• System must allow:
	  • Easy access to process information, especially during times of change
	  • Inputs and outputs of said processes and their reports

Information-Oriented	• System must store
	  • Previous data sources for a specific report
	  • Where new data sources necessary for a specific report can be found

Operational	• Search feasibility for process information, company and home-grown sources • Reporting of basic statistics/metrics based on BI needs
Performance	• The prototype should be tested with data from at 24 documented processes
Security	• Business users outside of the MIS team at Hanover should not have access to the database
Cultural & Political	• The prototype, built in MS Access, should be easy to translate to other environments if necessary

Conclusions/Recommendations

Process Documentation Repository Prototype
- Encompasses all the process documentation gathered from the interviews with business users
- Allows easy comparison of processes and identification data redundancy and data overlap

Datapedia
- Centralizes documentation on reporting procedures through a tool that is widely used at Hanover
- Provides general information on reporting procedures and data sources utilization while still restricting access to the data behind the report

We suggest the MIS team to develop a system in an SQL server based on the prototype we designed, utilizing the documentation provided since it addresses the necessary features listed by the Business Intelligence team and allows an easy conversion of the prototype data to the system

Acknowledgments