Ohio's Hospice Data Platform Project

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April 22, 2021

Background

Ohio's Hospice is an affiliation of not-for-profit hospice providers committed to:

- Increasing access, *diversifying our care and service offerings* to reduce suffering, pain, helplessness and unwanted waiting for people in need of hospice and palliative care in the communities we serve
- *Continuous improvement* in the delivery of superior care and superior service to all we have the privilege of serving
- *Improving efficiency* and performance to ensure mission sustainability and enhance accountability
- Creating and maintaining meaningful partnerships and collaborative initiatives with healthcare providers to *improve the quality of care* and outcomes of our patients
- *Creating and fostering* a positive, strong culture that attracts, retains and promotes the very best staff

“Diversifying Our Care and Service Offerings”

“Continuous Improvement”

“Improving Efficiency and Performance”

“Improve the Quality of Care”

“Retains and Promotes”

All of This can be Done Through Business Intelligence

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“**Business intelligence can** help **companies** make better decisions by showing present and historical data within their **business** context”

-tableau.com

Agenda

- ➔ Identifying the Problem
- ➔ Proposed Solution
- ➔ Requirements
- ➔ Planning Stage
- ➔ Analysis Stage
- ➔ Preliminary Alternatives
- ➔ Design Stage
- ➔ Domo Gaps
- ➔ Implementation Details
- ➔ Domo Portal Tour
- ➔ Questions

Problem

- Currently using Microsoft Power BI as main BI tool
- As Power BI releases updates, dashboards sometimes fail and there is little Microsoft support
- Bringing in new tables into Power BI can skew visualizations
- As Ohio's Hospice continues to grow, the longing to become a *data-driven* organization has become stronger

When a company employs a “**data-driven**” approach, it means it **makes strategic decisions based on data analysis and interpretation**. A **data-driven** approach enables companies to examine and organise their data with **the goal of better serving their customers and consumers**.

delwareconsulting.com

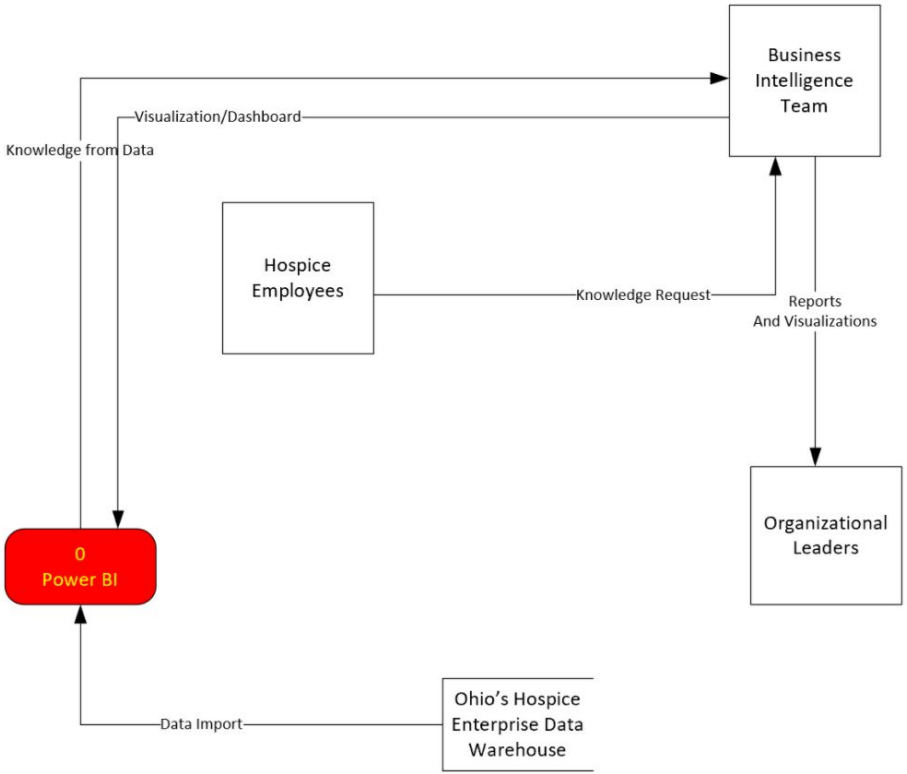
Proposed Solution

- A centralized and easy-to-use web-based data platform
- Simple enough for any user to utilize no matter the technical skill possessed
- Four main components: data quality, business glossary, data governance, and data reporting
- System will be modular, contain a well-detailed business glossary, provide security for private health information, and maintain data quality
- Allow users to view data in a graphical nature, as well as create and download the user's own reports
- Allow hospices to aggregate data and create benchmarks

Requirements

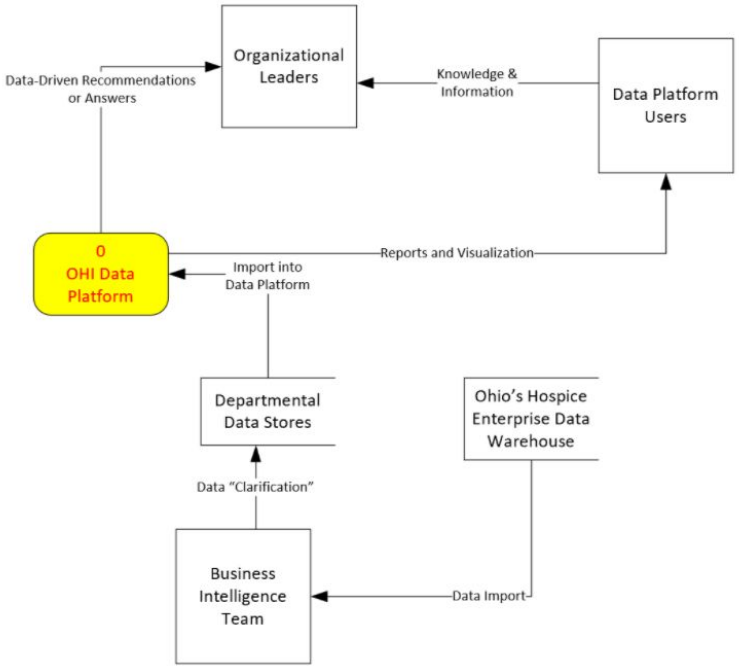
- Self Service Spectrum
- Presentation and Delivery
- Interactivity and Automation
- Analysis and Authoring
- Embedded Analytics

Current System Context Level Data Flow Diagram



Proposed Future System

Ohio's Hospice Data Platform Context Data Flow Diagram



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Planning

In-Scope

- Data Portal
  - Build Your Own Dashboard
  - Preset Dashboards According to Position/Location
  - Logo/Theming Customization Based on Business Unit
- Data Governance
  - Master Data Management
- Data Quality
  - Data Profiling
  - Data Parsing
  - Data Standardization
  - Metadata Management
- Business/Data Glossary
  - Management Through Data Stewards
  - Automatic Refresh
  - History of Change
- Automate Loading
  - File Drop Area
  - API Endpoints
  - Export that Leads Into ETL
- Custom Notification Configuration
  - User Specified Limit/Exception Type Notifications
  - Notifications Based on Roles/Permissions

Out of Scope

- We are not building a data warehouse
- We are not building the BI platform ourselves
- Technical support (maintenance) after completion of project
- Complete technical experience with BI platforms
- Providing technical updates, downloads, features, etc.

Assumptions & Constraints

Assumptions

- OHI's data warehouse will be available for us to use
- OHI Database Analysts and Information Technology department will be available as needed for the UD team
- OHI will provide finance and labor when/if applicable
- Teams will be working in an agile environment

Constraints

- Our team will only have a limited number of months to work on the project
- Knowledge gap between the UD students and the OHI team members
- COVID-19
- It is unknown what information OHI will be able to receive from the other member institutions
- OHI's present workload
- Budget set by OHI ($500,000)
- UD team has access to a free version of Power BI, limiting the capabilities.

Analysis

Economic Analysis

Costs	***Benefits***
Buying/Building Software	Real-time Data Visualization
Monthly Memberships*	Improvements in Quality of Care
Training	Revenue Increase
Entire Staff Support	Customization
Integration of Data	Ease of Use

*Pricing will vary based on make/buy/customize decision

Technical & Operational Analysis

Technical

- Learning curve for OHI employees with no technical background
- Many moving pieces to this project
- Different data sources
- Risk rating of 6 out of 10

Operational

- Allow organization to aggregate data and benchmark themselves against other hospices across the nation
- Easier to interact with data
- Low maintenance due to being a web-based platform

Political and Stakeholder Analysis

Stakeholders	***Interests***
Patients/Patient's families	• increased security and data assurance of their private health information
Caregivers	• new opportunities to give care based on use of BI platform • easier access to data and reports on patients
OHI Business Intelligence Team	• new opportunities to examine data, leading toward better business decisions
Guidance Health	• compliance, risks
External Organizations/Vendors	• changes in business practices due to data discovery

Legal & Contractual Analysis

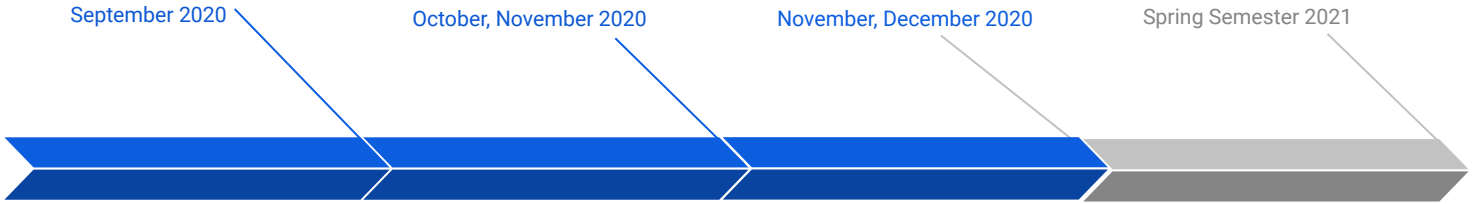
- HIPAA (Health Insurance Portability and Accountability Act)
- PHI (Private Health Information)
- FERPA (Family Educational Rights and Privacy Act)
- Company logos, colors, trademarks, and other intellectual property

Preliminary Alternatives

1 = easy	1 = easy	1 = scalable	1 = established co.
5 = hard	5 = hard	5 = not scalable	5 = "future of company not certain"

Company/Data Platform	Ease of Use	Ease of Integration	Scalability	Company Standing
Cloudticity Healthcare DataHub	1	1	1	2
IZENDA	3	2	2	2
Tableau	4	1	1	1
Domo	2	1	1	2
Looker	2	1	1	2
SAP	4	1	1	1
Sisense	2	3	3	2
Qlik Sense	2.5	2	3	2
Oracle	2	3	3	1
Mode	2	3	2	2
Board	2	3	1	2
MicroStrategy	2	3	2	2
Chartio	2	1	2	2
Klipfolio	4	2	2	2

First Semester Timeline



Planning

Key Deliverables: BPP, Schedule

Focused on understanding problem, researching solution, custom-build

Analysis

Key Deliverables: SRS, Updated BPP

Focused on requirements, providing possible alternatives, examined OHI Power BI survey, key themes

Analysis (con't)

Key Deliverables: SDS

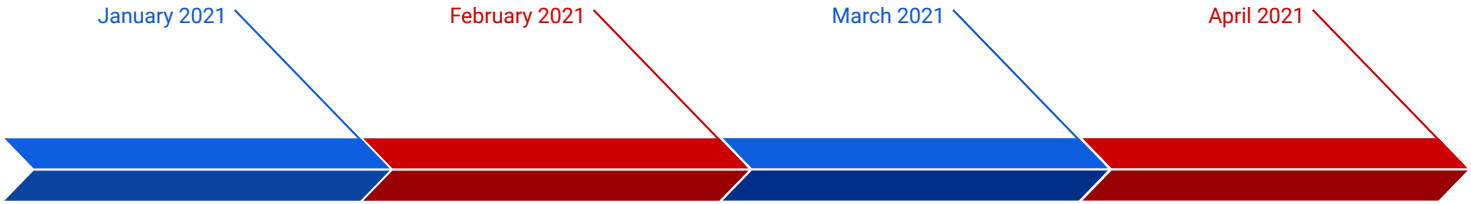
November 19: Going with Domo

Focused on Domo, updating deliverables, Domo proof of concept

Design & Implementation

Design & Implementation

Second Semester Timeline



Design

Pre-Implementation Deliverable, Implementation Dates

Implementation

Report Movement from Power BI to Domo, Begin Gap Analysis Research

Implementation (con't)

Gap Analysis, Training Programs, Report Movement, Data Sources

Implementation (con't)

Communication to Organization, Client Acceptance

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Gap Analysis (Data Governance)

- Tasked with completing gap analysis of Domo
- Conducted analysis and found *data governance* was lacking
- Found solutions to fill these gaps
  - Domo People Stats App
  - Domo DataSets and DataFlows App

"Data Governance is a collection of practices and processes which help to ensure the **formal management of data assets** within an organization."

dataversity.net

DomoStats People App

Benefits:

- See which people are in what roles and departments
- Watch how active your people are on the web
- Check out the top content creators and card managers in Domo

Business questions answered by this app:

- How do I track who is creating content in Domo?
- How do I track who is accessing the content in Domo?

DomoStats DataSets and DataFlows App

Benefits:

- Track broken, orphaned, or duplicated DataSets or DataFlows
- See DataSet and DataFlow success rates

Business questions answered by this app:

- Do I have any broken data sources?
- Do I have duplicated or unnecessary data sources in Domo?
- Who owns the content that needs to be fixed?

Implementation Details

- Test Plans
  - There will be no need for OHI to complete their own security tests, integration tests, module tests, ect., as Domo will take care of all testing themselves. Domo will be testing OHI's system as they slowly transfer data sources over from Power BI. More detailed documentation of testing plans that will be used cannot be completed at this time, as the Domo project will not likely be completely off the ground for years to come. More details will surface as the project progresses.
- Installation Plans
  - Because Domo is cloud-based, there should be little software and hardware to download, if any. The vision is to have a single logon. An approved OHI employee, with login credentials, will be allowed to access reports in Domo.

Implementation Details

- Conversion Plans
  - One of the main questions that needs to be answered is what reports will transition from Power BI to Domo, what reports will remain in Power BI, and what reports can be deleted all together. Eventually, the goal is to have every report off of Power BI and on Domo.

Report Name	Transfer	Keep (in Power BI)	Discard
2018.09.19.JAB.PremierDB.V1			
Admission Data for HOFC/CCH			
Average Visits Report			
Finance and Operations Report JAB			
HOCO OSU Financials			
HOFC patients by zip			
Info Max Data Report			
LCH 2018 Ambulance Study			No metrics
LCH 2019 Ambulance Study			
Lifecare Current Census by ZIP			
Loving Care Home Health Payor Sources 2019		No metrics	
MissionDashboardJAB			
OHI Board Report HOCO			
OHI Board Report HOD			

Implementation Details

- Proposed Training Materials and Procedures
  - Domo includes Domo University that is full of modules that teach users how to get the most out of Domo. Data analysts (CAADS members) have been assigned Domo modules and a completion date. Different licenses and certifications will be assigned to users as training progresses.
  - Ohio Hospice chose to purchase Domo's bronze level education package. With this package, they can have 12 employees become "MajorDomo certified." In addition, the package includes 8 seats in a virtual course with Graphable.

Domo Portal

Questions?