

Case Study: Improving Decision Making, Accountability, and Productivity through Data Analytics



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Categories:

- ◆ Increases productivity by reducing time to process data manually
- ◆ Improves decision making capabilities
- ◆ Increased transparency and accountability

About the Organization

Organization Name:

United Methodist Communities

Main Contributor:

Travis Gleinig, CIO

Organization Type:

Housing with Services, Home Health/Home Care, Hospice, Assisted Living Facilities, Acute Rehab Facilities, Long-term Acute Care Hospitals, Long-term Care Rehab Facilities, Skilled Nursing Facilities, Memory Care Facility, Continuing Care Retirement Communities (CCRC)

Organization Description:

United Methodist Communities of New Jersey (UMC) has a faith-based, non-profit mission to provide New Jersey seniors the security, health care, and socialization that creates an abundant lifestyle.

Project Description

The data analytics platform, powered by AI, aimed to support UMC's digital transformation journey by delivering real-time analytical insights for faster decision making. The project kick-started with a comprehensive analysis of various data sources along with stakeholder consultations to pinpoint key challenges and key performance indicators (KPIs). These insights were used to develop customized dashboards tailored to the needs of various business functions, enhancing information accessibility and empowering data-driven decision making.

To ensure the project's success, vendor offered a range of resources, expertise, and support, covering all aspects of implementation and maintenance of the dashboards. The goal was to drive digital transformation and deliver business value to UMC by providing real-time, actionable data insights.

Application Area(s)

Back-Office Operations, Clinical Care, Resident/Client Support Services, Dining Services, Facilities/Maintenance Management, Customer Relationship Management

Core Services Offered

Data Warehousing, Data Lake, Data Analytics, Data Visualization, Data Exploration, Data Labelling, Robotic Process Automation, Data Integration, Data Migration, Data Cleansing, Data Consolidation, API Development, Data Modelling, Machine Learning, Dashboards, Scorecards

Technology/Consulting Firm Partner

NuAlg

Status Before the Project Started

UMC's data was spread across multiple systems, making it a bottleneck to access all the essential KPI's and metrics in real-time. This made it difficult for leadership to make informed decisions in a prompt manner.

Business Model

CCRC type, Medicare Reimbursement, Medicaid Waiver Coverage, Private Health Insurance Coverage, Private Pay, Standard of Care, ROI, ACA-Related Opportunity (ACO, Hospital Readmission Reduction Program, Bundling of Payment, etc.)

Planning Philosophy/Approach

The process of creating the AI-powered analytical platform at UMC involved a comprehensive assessment of the organization's data from various lines of business. The vendor team worked with UMC stakeholders to evaluate their needs for important data parameters used in decision making. Based on these assessments, the vendor determined the KPIs for each business function and used this information to create custom dashboards tailored to fit each stakeholder's needs and requirements.

Throughout the implementation phase, the vendor continued to seek feedback from stakeholders to ensure the best way to represent data and effectively support their decision-making processes.

Status After the Project and Outcomes

Improved decision-making capabilities, increased transparency, efficiency, productivity, and better data-driven insights.

Project (Data Analytics):

The Interactive Analytical Dashboards were created (see below) to solve the problem of difficult and time-consuming data analysis due to multiple fragmented data sources. This often required manual data consolidation and switching between systems, causing reduced efficiency.

◆ Data Streamed from Multiple Sources

The analytics dashboards consolidate data from multiple sources, such as resident records, occupancy across communities, payer transactions, finance databases, employee records, donations data, hospitalization and rehabilitation, etc., thereby eliminating the need for frequent manual data consolidation.

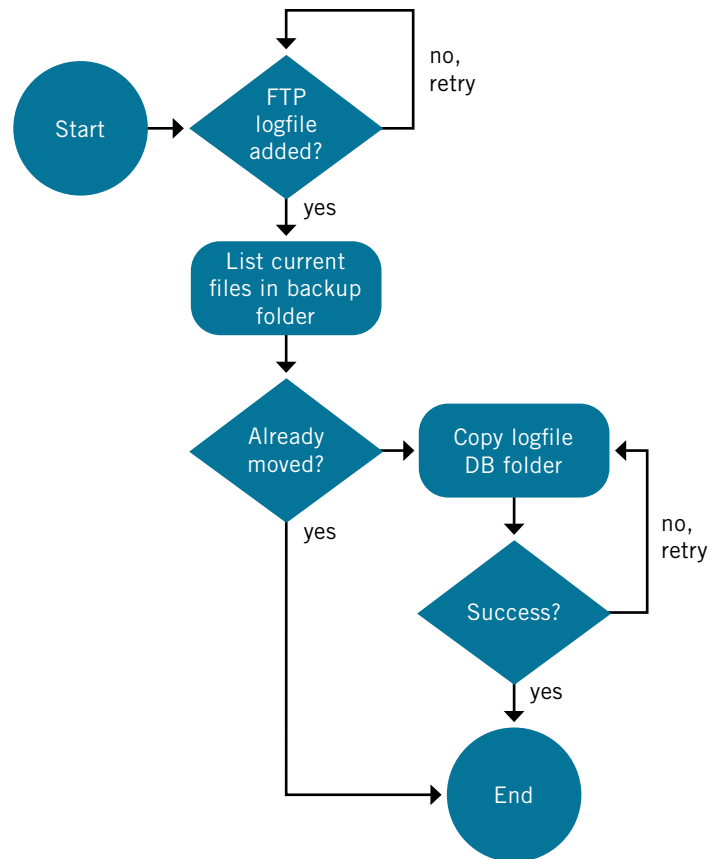
◆ AI Modeling

Additionally, advanced analytics such as predictive modeling, machine learning, and natural language processing were being used to uncover hidden patterns and trends in the data, providing deeper

insights into the organization's operations. This resulted in expeditious access to critical KPIs and provides unique insights into patterns within the data which has enhanced transparency across communities and stakeholders.

◆ Secured and Automated FTP Data Shipping

To ensure secure and efficient transfer of EMR and census data, the vendor team established special connections by leveraging PointClickCare (PCC) Data Relay. The process involved obtaining PCC records as log files in FTP folder and importing, transforming, and loading them into the SQL database for analytics. The import of log files from FTP folder was scheduled at regular intervals to provide real-time analysis of KPIs.



◆ Filtering Mechanism

The vendor team also enabled filtering mechanisms for data, with respect to facility, transaction type, and service level, etc., enabling users to gain a deeper understanding of data and its impact on other KPIs.

◆ **Security & Role-Based Access**

Furthermore, these dashboards span across the domain of finance, operations, clinical services, and philanthropy that are built on a user-permission-based architecture, ensuring data presentation is aligned with the user's role and responsibility. This not only ensures data security for sensitive data, but also ensures that data presentation is relevant and tailored to the user's needs. Row level security enables scalability up and down across the organization without the need to create new dashboards. This in turn ensures that metrics and KPIs are aligned from the top down.

Following are some of the KPIs and analysis done at UMC:

◆ **Historical Occupancy Trend Analysis (From PCC)**

This analysis provides overview on the occupancy trend of a particular building, department, or service level over a specified time period. The data can be broken down by year, month, and service level, allowing for a deep understanding of the occupancy trends and patterns. This analysis helps in making informed decisions related to resource allocation, staffing, and occupancy management.

◆ **Census Analysis across Service Line (From PCC)**

This analysis provides a detailed overview of the census data across different service lines UMC offers. It provides insights into the occupancy trend, number of patients, and their demographic profile. This information can be used to make informed decisions regarding resource allocation, staffing needs, and service offerings.

◆ **Trend Analysis with respect to Payer Type (From PCC)**

This analysis focuses on the trend of patients admitted to UMC based on their payer type. It provides a comprehensive view into the payer mix, patient demographics, and other relevant KPIs. This analysis can be used to evaluate the financial impact of different payer types and make informed decisions regarding revenue and growth strategies.

◆ **Invoice Analysis (From Square 9, GreatPlains)**

Providing a swift overview of invoices in relation to buildings, department, status, vendors, accounts (overdue or pending approval) and allowing for prompt resolution of bottlenecks.

◆ **Accounts Payable Analysis (From Square 9, GreatPlains)**

Offering a comprehensive view into the aging bucket, due date analysis, and factors impacting aging, thus facilitating informed decision making.

◆ **Budget vs. Actual Finance Analysis (from Square 9, GreatPlains)**

Enabling a rapid evaluation of spending, earnings, and variance across areas, service levels, and communities.

◆ **Revenue Growth Summary (from Square 9, GreatPlains)**

Providing a detailed overview of factors such as budget, credits, and debits, across buildings, departments, and fiscal periods.

◆ **Analysis of Donations Received (Using Bloomerang report automation)**

The analysis of donations received via various channels was used for tracking donor retention rates and assessing the effectiveness of fundraising strategies. This analysis identified the most effective channels for acquiring and retaining donors. Additionally, by recognizing the appeals associated with the donor's original and second gift, stakeholders were able to gain insight into donor motivation and interests, allowing them to develop more effective fundraising strategies.

Lessons Learned/Advice to Share with Others

- ◆ **Set clear goals and KPIs:** Defining clear goals and KPIs for the dashboard implementation is necessary to ensure that the solution is aligned with organizational objectives and provides value.
- ◆ **Training and support:** Providing training and support to end-users will ensure that they can effectively use and maximize the value generated using these dashboards.
- ◆ **Continuous improvement:** Continuous review and improvement of the dashboards ensures that they remain relevant, useful, and up-to-date for the organization with changing dynamics of business.
- ◆ **Data Quality:** Ensure the data used in the dashboard is accurate, consistent, and up-to-date so that the dashboard provides meaningful insights.
- ◆ **User Adoption:** Involving stakeholders and other users in the community during the implementation process helps ensure that the dashboard meets their needs and is user-friendly, promoting user adoption and increasing the chances of success.