WynTec Healthcare Consortium Model

Problems Healthcare Organization Face

Healthcare Organizations are constantly running to improve their data management platforms. Over the last decade data projects have competed for attention. Initiatives like HIPAA, Electronic Health Records/Electronic Medical Records (EHR/EMR), Privacy Health Information (PHI), ICD-10, Affordable Care Act (ACA), Affordable Care Organization (ACO), Exchange and Integration have kept the services arm quite busy.

Many of the progressive healthcare organizations have embarked on the mission to be data-driven organization. There is direct correlation for improved patient care and satisfaction, process efficiencies and enhanced services by assessing knowledge from accurately and timely information.

Becoming a data driven healthcare organization is an honorable goal as information is a viable healthcare asset. However, the practice of collecting the relevant clinical, financial, patient, demographic, historic and utilization data funneled through an enterprise analytical engine in a clinical care setting has been a slippery slope with many unaccountable roadblocks.

The Market

Recent survey from KPMG announced that only 10% of hospitals and clinics believe their organizations are using data and analytics at their highest potential. The opportunity to help the other 90% to turn their data into insightful information is eminent. Corporate executives and data managers all agree that information is a key asset to their organization. To seek value in this information, the data must be collected, organized and processed as an enterprise asset. But, in many cases, their hands are tied as the cost to develop data warehouse, data marts and enterprise reporting engines far exceeds the budgets, focus and skill levels of most hospitals.

In today's market, enterprise class data warehouses are not prevalent in hospitals. They are buried with operational issues pertaining to managing EMRs and ancillary systems. Arm wrestling with messaging data between internal and external systems; dealing with interoperability and data latency issues, HIPAA, PHI, state reporting, exchange, and research (to name a few). These factors place a drain on their data resources hence healthcare organizations limit their analytics capabilities to operational reporting.

Healthcare organization attempt to learn from the marketplace and are often overwhelmed by the overload of vendor hardware, vendor software and vendor promises. Recent analysis found over thirty three (33) commercially available reporting tools that tout to be best-of-breed. There are over a dozen different database technologies, and ½ a dozen data movement tools. All claiming to be the right choice in the analytics stack. No wonder, healthcare organizations are confused as they are swamped with too much market information in a rapid changing Business Intelligence ecosystem.

Silo Reporting

Some establish departmental teams to generate operational silos to mimic reporting data extracted from the heterogeneous EMR and ancillary systems (such as LABs, PAX, Claims, AR, GL, HR and Supply Chain). In many cases these reporting silos do not communication with each other and islands of disconnected reporting structures are in place. The islands of data that are not connected to each other offers very little information insight across organizations. Simply put, without integrated information you cannot measure what you do not collect.

Healthcare organizations have even reached out to the EMR vendors to provide reporting services. This reach only grasped air as the EMR vendors are not organized to offer analytics services across disparate systems. These vendors expertise is building Online Transaction Processing (OLTP) systems and, at best, are service providers for operational data from their own EMR. Healthcare organizations have reaped little enterprise value pursuing the EMR vendors to assist with their enterprise analytics.

Recently, many of the progressive healthcare organizations have embarked on the mission to be data-driven organization. There is direct correlation for improved patient satisfaction, process efficiencies and enhanced services by offering accurately and timely information. The enterprise data will need to be dismantled from the many source systems, both internal and external, brought into central models and structured appropriately for meaningful insight and actionable analytics.

Mergers and Acquisitions

The latest drive of many of the larger facilities is the aggressive push to grow business by agglomerating through mergers and acquisitions (M&A). During the integration period, the efforts are initially focused on aligning the products, resource and services under one company banner. The general practice is to leave the data in disparate EMRs and silo data stores until the services are combined.

Post integration, the newly merged organizations center their operational data into a consolidated EMR but they tend to leave the ancillary, historic and reporting data in legacy data stores. Hence creating more silo databases. To fully integrate the data, the merged organizations must extract reporting data from the operational, legacy and historic data into a

central environment. The data must be non volatile, historic, transparent and of sufficient quality.

Attempts to Remedy

Some achieve this centralization by moving towards enterprise data warehouse, federated reporting or virtualization (dynamically extrapolate the data from the source systems). However, only the enterprise data warehouse framework truly captures the history and time variances necessary for longitudinal and latitudinal reporting. The visualization path is an effective discovery method and ideal for prototyping but not suitable for longitudinal and latitudinal analytics.

Traditional data collection processes, data integration and data warehousing initiatives require a lot of investment, coordination, governance and specialized resources. Many initiatives have shown little success due to the lack of knowledge, minimum best practices and weak governance in terms of commitment and process.

Some of the bigger vendors (such as Oracle, Teradata, IBM and SAP) try to fill this empty space, by delivering vendor products and generic healthcare data models. These generic healthcare models are sufficient for basic reporting needs, but do not efficiently handle unique customer requirements. These models address typical healthcare population, diseases, measures and utilization reporting. But fall short when the data mining and discovery process is outside of the general definitions. Soon, the intelligent healthcare organizations, that leverage information to drive their business, will thirst for more information than what these generic industry models can offer.

To move to an enterprise model, larger organizations are recruiting executives to help position their data as strategic insight for business decisions. New characters are being included in the executive ranks; such roles as Chief Data Officer (CDO), Chief Knowledge Officer (CKO) and Chief Research Officer (CRO) are emerging. The executive mission is to place meaningful enterprise information in the hands of the decision makers. With this information the organization is more effective in terms of delivery, performance and patient satisfaction.

However, the practice of collecting the relevant clinical, financial, patient, demographic, historic and utilization data funneled through a central data repository in a clinical care setting has been a slippery slope with many unaccountable roadblocks:

Time is also of the essence for proactive decision making. An important criterion is the time it takes to deliver the enterprise information to decision makers. Many data extraction and data assembly processes of simulating the information into meaningful structures may take many weeks.

To exasperate the time latency issue, and as a result of the manual efforts involved in preparing the data, the information delivered tends to be non transparent, lacks sufficient quality and often volatile as history is not captured and reproduction of the information is not feasible.

These organization, soon lose their confidence and competitive edge as decisions are made by looking at their data in the rear-vision mirror. Even worse, making bad decisions based on erroneous data is very costly for healthcare organizations. In some cases the information is not even available and the executives are maneuvering their facilities in the dark. Because of this, the often used phrase “garbage in is garbage out” actually becomes “garbage in is gospel out”. This does not lend well for effective patient care.

It is understandable why most healthcare organizations have not been successful with mining their enterprise data. Especially when one considers the lack of technology, excessive cost and typical time it takes to build an enterprise data warehouse. The success quotient is aggravated by complex governance, restrictive budgets, competing politics, lack of metadata and ontology plus the fear of change. Healthcare organizations seek partners that offer vendor agnostic data frameworks; that are easy to understand and satisfy the uniqueness of the customer. The technology partner must also understand the practice of healthcare organizations.

The presented data frameworks must be domain specific; including industry knowledge blended with robust technical effectiveness. That is, it must include best-of-class architecture, optimum processes, iterative development lifecycle, use case driven designs, agile deployment, feasible time-frames, metadata and ontology navigated and delivery based on healthcare business drivers.