

# Using Data and Analytics to Improve Healthcare Business Performance

*White Paper*

Dan Merriman

*Principal, Business Intelligence*

Dan Kinsella

*Vice President, Healthcare Practice*



**THE REVERE**  
GROUP  
an NTT Data Company

## Using Data and Analytics to Improve Healthcare Business Performance

A critical source of competitive advantage for healthcare companies is the ability to derive valuable information from vast stores of data. Due to technology advancements, regulatory requirements, extensive interactions with many third parties and complex financial arrangements, healthcare is one of the most data intensive industries. Healthcare requirements are further complicated by industry trends such as pay-for-performance, disintermediation, and the shift toward individual and small group markets. As a result, a central challenge for healthcare companies is improving both the efficiency and effectiveness of transforming data into actionable business insight.

The use of data and analytics is no longer limited to select “power users” conducting highly sophisticated analyses. It is becoming an essential tool in healthcare for senior management, operations, sales, marketing, finance, provider relations and customer service. Each of these groups can use data, analytics, metrics, and dashboards to understand how they are performing, identify and address emerging issues, and determine how to continually improve performance over time. In addition to summary information of overall performance, these groups will find that alerts that identify areas that require immediate attention are beneficial, as well as the ability to drill down and diagnose underlying causes of problems. All of this information needs to be both timely and accurate.

The use of data and analytics can positively affect healthcare companies by:

- Increasing margins by optimizing the efficiency of key administrative processes such as enrollment, customer service and claims processing.
- Improving retention by targeting and acquiring customers that are the best fit for your offerings, understanding and addressing the underlying causes of attrition, and optimizing service to cost-effectively improve customer satisfaction.
- Minimizing the cost of healthcare services (claims) by determining how to deliver the optimal level of care while paying for performance and managing the care demanded by subscribers.

Critical leading practices for using data, analytics and metrics to significantly improve healthcare business performance include:

- Business and IT partnering to determine how business intelligence technology can be used to help address priority business goals.
- Implementing a phased approach that delivers tangible business value at each major milestone.
- Ensuring that all initiatives fully address the related processes, roles/responsibilities, skills and incentives. Although a key enabler, technology will not create value alone.
- Establishing clear senior management accountability for metrics and targets.

## I. An Implementation Approach

This white paper outlines an approach and leading practices that healthcare companies can use to significantly improve business performance with data, analytics and metrics. The approach involves the business, IT and finance areas partnering in an ongoing collaborative process that is illustrated in Figure 1. The approach is implemented within the overall context of the business strategy and company objectives, with a focus on areas where the company is looking to make significant improvements.

There are three primary elements of the approach, illustrated in the center of Figure 1:

- Laying out a Business Intelligence (BI) strategy and “roadmap” that describe a phased approach for meeting the prioritized needs of the business.
- Implementing a phased set of BI projects that address the people, process and technology changes required to achieve the desired business objectives.
- Continuously measuring and improving actual business results using business metrics.

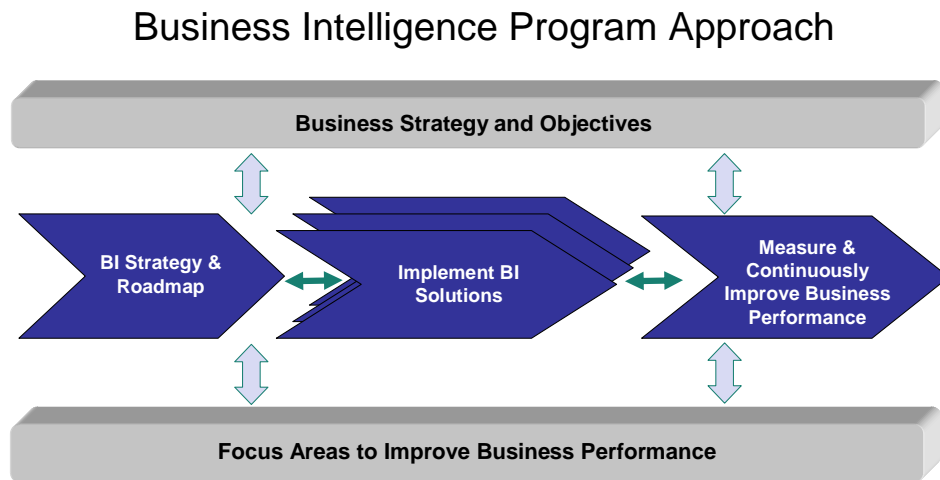


Figure 1

## II. A Key Element of the Approach: BI Strategy and Roadmap

Whether defining the needs of multiple projects or a single project, it's important to understand the priority business strategies and objectives, as well as the people, process and technology changes required. A way to think of this approach is connecting the top down view of what the business is trying to accomplish with the bottom up view of the current state of the organization. It is also beneficial to consider the ability and appetite for change in the implementation time frame.

Figure 2 illustrates this approach in a phased roadmap. If the scope of the implementation is only one project, then these same topics are addressed for that single initiative.

The major components of the BI strategy and roadmap are a linked set of:

- Priority business objectives and strategies
- Related business requirements for addressing these objectives and strategies
- The primary implementation requirements spanning process, organization and skills, data and technology

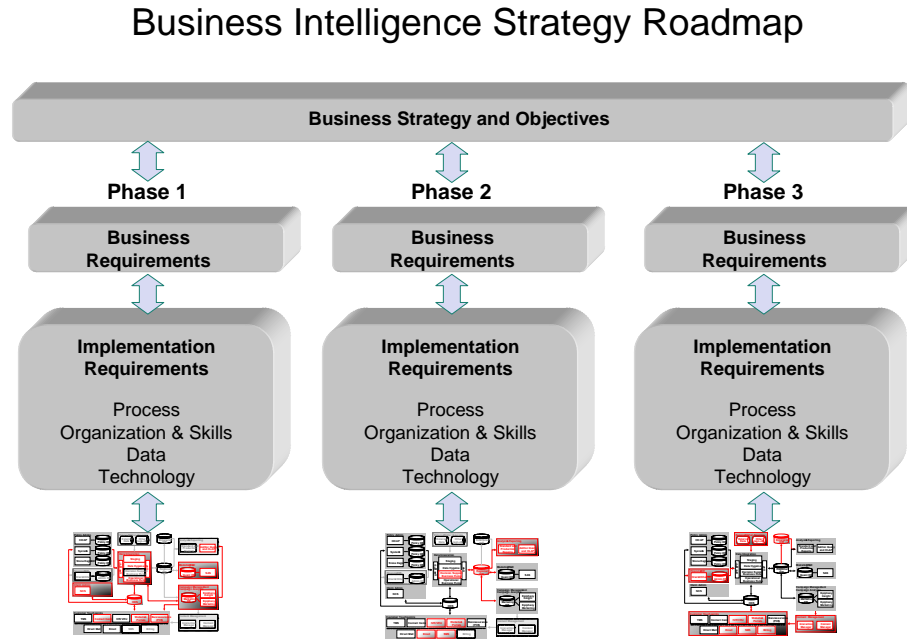


Figure 2

### III. Example Healthcare Scenario: Using BI to Improve Customer Retention

We will use an example healthcare scenario to illustrate sample business and implementation requirements to successfully fulfill a phase of the roadmap. A healthcare insurance company wants to increase profitability by improving its ability to retain business customers and the subscribers of these customers. Using this scenario, Table 1 illustrates sample business requirements for increasing profitability by improving corporate client and subscriber retention. These sample requirements correspond with three BI-related capabilities which the business identified as being critical to successfully achieving the stated business objective. The BI-related capabilities include:

- Enabling account managers to demonstrate to corporate clients how wellness management programs have led to improvements in productivity and absenteeism, as well as a reduction in the premiums that otherwise would have to be paid.
- Providing insight into the value added services that are most effective at retaining subscribers, to guide additional service development and promotion.
- Helping the customer service team understand how they can further improve two critical areas for corporate customer and subscriber retention - time required to resolve issues and enroll new subscribers.

<b>Business Objective: Increase profitability by improving customer retention</b>	
<b>Effectiveness of Wellness Management</b>	<ul style="list-style-type: none"> <li>• Enable analysis of wellness service usage (e.g., screening, fitness, advice) such as trending and drill down by service and subscriber group in order to correlate with improvements in productivity and absenteeism</li> <li>• Enable analysis of claims paid on behalf of clients to show benefits of wellness service usage</li> </ul>
<b>Subscriber Use of Value Added Services</b>	<ul style="list-style-type: none"> <li>• Provide data and analytics to support the correlation of the use of value added services (e.g., personal health records) with retention of subscribers</li> </ul>
<b>Effectiveness of Customer Service</b>	<ul style="list-style-type: none"> <li>• Provide customer service with dashboards providing performance measures and drill down capability for key metrics (e.g., time to resolve issues, % of issues handled on first call, time required to enroll new subscribers)</li> <li>• Enable analysis of customer satisfaction with handling major events for subscribers (e.g., major illness, birth, retirement)</li> </ul>
<b>Key Metrics</b>	<ul style="list-style-type: none"> <li>• % corporate clients retained by value and revenue</li> <li>• % subscribers retained by value and revenue</li> </ul>

Example Business Requirements for One Phase of Roadmap  
Table 1

Based on the healthcare company's business needs, Table 2 illustrates the implementation requirements for supporting those needs, including changes to processes, organization and skills, data and technology.

<b>Process</b>	<ul style="list-style-type: none"> <li>• Improve the account management process by incorporating wellness management analysis and discussions of results with benefit administrators</li> <li>• Refine the subscriber enrollment and customer service processes to encourage the use of value added services</li> <li>• Implement data governance process to continually improve the quality of the customer data</li> </ul>
<b>Organization &amp; Skills</b>	<ul style="list-style-type: none"> <li>• Establish clear responsibility/incentives for retention of corporate customers and individual subscribers</li> <li>• Add analysis resources to account management team and train all account managers to discuss wellness results with clients</li> <li>• Assign and train data steward to manage customer/account master data</li> </ul>
<b>Data</b>	<ul style="list-style-type: none"> <li>• Consolidate/cleanse customer and usage data</li> <li>• Provide value added service data at the subscriber level</li> <li>• Establish single systems of record to all corporate and subscriber information</li> </ul>
<b>Technology</b>	<ul style="list-style-type: none"> <li>• Select and deploy tool(s) for the account management analyst as well as the customer service operations staff</li> <li>• Provide access to data warehouse from universal agent solution</li> <li>• Implement external feed for value added service usage</li> </ul>

Example Implementation Requirements for One Phase of Roadmap  
Table 2

During the development of the roadmap, the team will undergo multiple iterations of defining business objectives, the business requirements to be addressed in each phase, and the required implementation actions needed to address these business requirements. The key is ensuring that each phase is able to be implemented, taking into consideration the appetite for both investment and change across the organization. The roadmap development process generally includes a number of spirited discussions among the stakeholders to determine the business needs that will be addressed first, versus those that will have to wait for later phases. Effective prioritization is critical for establishing the level of scope and expectations needed to be successful.

#### IV. Using Business Metrics to Enable Continuous Improvement

One of the most valuable applications of BI, and an important complement to the implementation approach, is the use of business metrics to maximize the performance improvements enabled by major business and technology initiatives. An effective set of business metrics and associated analysis processes motivates proper behavior. It also provides actionable insight into where attention should be focused in order to maximize quantifiable results.

Business metrics are developed and used throughout a BI implementation. Initial metrics are defined during the development of the strategy and roadmap. The full set of metrics, related processes and skills are defined and implemented simultaneously with the solutions. They are then used as the basis of ongoing measurement and continuous improvement of business performance.

The following sections describe best practices for defining and using business performance metrics.

##### A. A Combination of Value and Analysis Metrics

Companies typically don't have trouble defining metrics – the greatest challenge is selecting the right metrics. An effective method for selecting the best performance metrics is to: 1) define a core set of *value metrics* that quantify the impact of the key initiatives on business performance, and 2) identify a larger set of supporting *analysis metrics* that provide insight into how well the components of the initiatives are working, while helping diagnose the causes of any issues that may arise.

*Value Metrics* measure the effectiveness of an initiative in addressing a business objective. While they don't necessarily have to be based on revenue, cost or profitability, they should directly link to these financial measures (e.g., time/resources required per process, effectiveness of a major task, quality of an output). Value metrics should be limited to one to three per improvement area to maintain focus and manage implementation costs. Each value metric and related targets should have a senior manager who is clearly accountable for them.

In our healthcare scenario, an example value metric would be the “percentage of profitable small and medium business clients (SMB) retained,” which would be tracked by both the percent of revenue/profit and volume retained over a time period (i.e., month, quarter, year). The incremental improvement in this metric can be multiplied by the total revenue/profit of profitable SMB clients and the total number of profitable SMB clients to determine the bottom line impact of the customer retention initiatives.

##### B. Analysis Metrics — Providing Valuable Insight

While value metrics are useful for determining the business impact of an initiative, they are inadequate for improving results in the near-term, or continuously improving business performance over the long term. Each value metric needs a set of supporting *analysis metrics*. Analysis metrics measure current conditions to help diagnose problems, identify emerging issues and enable continuous improvement. They include leading indicators of the value metric drivers. Generally, analysis metrics are much more numerous than value metrics. The following three categories can be useful for identifying analysis metrics:

- **Process Indicators** — measure the improvements being made in the time, effort and output of steps of the business processes that are key to achieving the value metric targets. Process indicators provide useful insight into the sources of potential problems, as well as early warning regarding emerging issues.

- **Other Dependencies** — provide additional insight beyond the process indicators. Members of the business/IT team will point out other areas that should be monitored to identify problems and enable continuous improvement beyond those identified by considering business processes. Examples include information required (e.g., accuracy of analyses), events (e.g., outcomes of a customer interaction), and the progress being made with technical implementations (e.g., adoption, data quality, level of integration).
- **Drill-Down Comparisons** —compare the effectiveness of different communities. This helps identify the most effective areas and those that require more assistance. These metrics provide an additional dimension, or level of detail, to the value metrics, process indicators and other dependencies. Examples include drill-downs by 1) geography, 2) individuals or groups of individuals, 3) product or 4) sales/service territory.

Value Metric	Process Indicators	Other Dependencies	Comparisons
<b>% of profitable SMB clients retained (by volume and value)</b>	% enrollment of prospects from target segments	Accuracy of identifying target prospects that are ultimately profitable	% of clients retained by customer service team, region, industry type, revenue size
	Average claims processing time for target SMB clients	Average time required to handle all service requests	
	% use of value added services by target SMB clients	Customer satisfaction handling major events (e.g., major illness, birth, retirement)	
	% target SMB clients contacted during renewal period		

Value and analysis metrics for the healthcare example  
Table 3

As noted above, the *value metric* used here is the *percentage of profitable SMB clients retained*, which can be calculated on a month-over-month, quarter-over-quarter or year-over-year basis. For this value metric, *process indicators* are used to track the progress of the people, process, data and technology changes, as well as determine if process improvements are leading to desired results. For example:

- Attracting subscribers from target market segments that are less likely to leave
- Resolving claims in a timely manner which is a key driver of retention
- Expanding utilization of value-added services by target subscribers which has been shown to cause higher levels of retention
- Increasing the percent of target clients that are proactively contacted during renewal period, which has also been shown to improve likelihood of renewal

Insight into how well the improvements are impacting each of these indicators provides staff members with early warning regarding emerging issues (e.g., sudden increase in claim handling time). It also provides indications as to where they should be focusing their time (e.g., recent campaigns have not been effective reaching desired target segments).

*Other dependencies* may include insight into the effectiveness of 1) marketing and underwriting identifying profitable, target prospects and 2) the customer service staff handling all customer service requests, as well as the major events important for retention. The *drill down comparisons* would show relative outcomes by the customer service team, region, industry type, and revenue size. Analysis metric results that are below expectations provide valuable insight into the potential sources of problems or emerging issues.

Using the three categories of analysis metrics enables the team to identify the full set of information that will be most useful. Many times metrics teams focus on only one or two categories, missing others that could provide very valuable insight.

### **C. Implementing Business Metrics**

The implementation of business performance management encompasses the three primary areas of technology, process and people, similar to any other project of this scale and complexity.

The technology components of the project include the implementation of the dashboards, reports, analytics capability, data architecture, integration and infrastructure. While this work is primarily done during the implementation step, a technical representative should be involved during metric definition. The purpose of this involvement is to ensure the majority of the priority metrics can be cost-effectively implemented given the current environment. It is important to avoid begin surprised at this point that the identified key metrics may not be able to be implemented given the available program resources, due to such things as lack of data or integration challenges.

The process aspects of the initiative should include procedures for continually refining the current metrics, adding new ones, and retiring those that are no longer used. The team also needs to work with the users to understand and continually improve the process for analyzing and acting upon the information being provided. Both processes will evolve over time as business needs change and the users gain more experience.

The people issues also need to be addressed (i.e., change management) during implementation. This includes training and skill development, adjustments to roles and responsibilities and incorporating the metrics into compensation programs. It is important to note that while linking metrics to compensation can be a powerful performance driver, it can also create serious problems if used improperly or prematurely. Before linking metrics formally to compensation, it is important to establish a culture of continuous improvement, ensure that metrics are valuable to users (not just their managers) and confirm that they are driving the proper behavior.

### **D. Measure and Continuously Improve Results**

After implementing this capability, the accountable person, along with the supporting business, IT and finance team, reviews the results of the value and analysis metrics, and reports the information to the appropriate individuals. This is done as necessary, generally weekly to monthly depending on the information.

Based on these insights, the team can determine the root causes of any significant opportunities or issues and select the appropriate response. If the opportunity or issue will have a significant impact on near-term business results, immediate action can be taken. Otherwise, the information can be used to continuously improve the processes and analysis capability.

### **V. Conclusion**

Innovative use of data, analytics and metrics enables healthcare companies to improve both the efficiency and effectiveness of their operations while gaining advantages over their competitors. For most companies, fully implementing business intelligence and business performance management capability takes time. However, a great deal can be gained by starting small and evolving gradually. Identify areas where focused investment and manageable changes to people, process and technology will produce tangible business results. Build on the momentum and credibility established during these first projects to take on more challenging initiatives in follow-

up steps of a phased plan. Once business leaders have first-hand experience with this capability and see its value, demand for it is likely to rapidly expand. By using a disciplined approach and best practices from the start, companies can provide business managers with the insight needed to significantly improve business performance.

### **About the Authors**

**Dan Merriman** is a Principal with The Revere Group. He is a lead specialist in business intelligence (BI) strategy and business performance management. For 10 years, Dan has served the BI industry with an emphasis on maximizing the business value gained from BI and data warehouse initiatives. Dan has extensive experience working in many industries, including healthcare. He publishes frequently on these topics and is a faculty member of The Data Warehousing Institute.

**Dan Kinsella** is a Vice President with The Revere Group. He leads the National Healthcare Practice with more than 20 years of professional consulting experience in the healthcare industry. Dan has broad experience in all segments of the industry including providers, payers, life science and associations. He also has extensive experience in assisting clients in developing and executing effective IT strategies. He publishes and presents frequently on topics of interest to the healthcare industry. Dan has his master's degree in Health Management and Finance from the JL Kellogg Graduate School of Management at Northwestern University.

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