

Business Intelligence

Enabling High Performance
for Health Care Providers


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In an environment dominated by concerns over escalating costs and quality of care, health care providers have recognized the need to significantly deliver improved outcomes and increased business excellence. To do so, they need a strategy to rise above the rest—a road map to achieve high performance and the business intelligence tools to help them monitor and track their high-performance journey.

Understanding distinctive capabilities of high-performance providers

Accenture has conducted ongoing and extensive research on the components of high performance across industries, including the health care provider industry. For most industries, it can be defined in terms of a shareholder value model: High performers consistently deliver superior returns to their shareholders through industry and economic cycles and across changes of leadership. Health care, however, is different.

The diversity of the provider market and the multitude of individual business situations within it mean that what actually constitutes high performance will vary, provider by provider. However, in all cases, high performance value can be measured by two broad categories—improved outcomes and increased business excellence (see Figure 1).

These two categories are further broken down into several distinctive capabilities—clinical quality, customer satisfaction, operational performance and financial longevity (see Figure 2).

Outcomes are driven by improved clinical quality, which can be achieved through increased patient safety and satisfaction and a focus on regulatory compliance. Providers that achieve high performance consistently accommodate evolving standards and deliver excellent patient care.

Customer satisfaction encompasses ratings from a broad constituency, including patients who receive medical services, physicians who choose hospitals for their patients, insurers, hospital employees and the local community. Providers that are high performers strive to increase satisfaction among all important stakeholders in a hospital setting.

Business excellence is driven by operational effectiveness that leverages information and communication technologies and resources to enable more informed clinical and business decisions. Improved decision-making helps providers better achieve high performance.

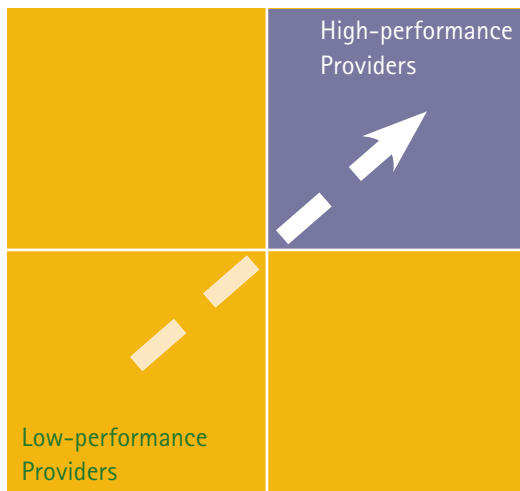
Business excellence is also fueled by financial longevity, which includes a long-term view on capital funding and the balance sheet to ensure a sound financial platform for the future.

Defining high performance by these distinctive capabilities creates a set of guidelines for providers to measure their ability to consistently outperform competitors. The next step for success, then, is to develop strategies to monitor and track trends and performance. Measuring performance efficiently and effectively in a health care setting relies on the smart use of technology.

Figure 1. High-performance health care providers can be measured by generating improved outcomes and sustaining business excellence.

Accenture Health Care Provider Value Model

Outcomes



Business Excellence

Outcomes: Patient Value

Key metrics:

- Clinical Quality
- Customer Satisfaction

Business Excellence: Community/ Shareholder Value

Key metrics:

- Operational Performance
- Financial Longevity

Figure 2. High-performance providers consistently meet and exceed leading practice benchmarks and metrics within these four distinctive capabilities.



Technology—the grand enabler

Over the past 20 years, health care organizations have experienced radical changes in technology. Hailed as the ultimate performance enabler, information technology has indeed added efficiency in its replacement of manual processing. In more recent years, however, health care IT has come under greater scrutiny as new clinical information systems begin to replace disparate and redundant systems and aging technologies. As part of this trend, health care providers are taking a closer look at some of the outdated decision-support systems that once tapped database resources to enable business decision-making.

Despite investing millions of dollars in decision-support software over the years, many health care organizations still cannot leverage and use the information they collect from systems that track patient flow, clinical quality, patient and physician satisfaction, and key cost indicators. To better leverage the data from the systems that measure and track high performance, providers need a new and improved methodology to provide more current and comprehensive information. That is just what can be accomplished through a fact-based support system called business intelligence, a set of concepts and methods that help improve business decision-making. Decision-support systems and enterprise information systems of the 1980s and early 1990s were forerunners of today's business intelligence tools.

Business intelligence—how your business is doing

Similar to decision-support technology, business intelligence is a group of tools that collect and analyze internal and external data to generate knowledge and value for an organization, including business process decision support at the strategic, tactical and operational levels. Business intelligence already has been used across many other industries with tremendous success. Just recently, however, the concept of business intelligence has been gaining traction in the health care industry.

A business intelligence solution rests on the foundation of a data warehouse—a database populated with data from a variety of transactional systems optimized for information retrieval. A data warehouse can be used to deliver value in the areas of business projection, market trend analysis and cost minimization. In the health care world, these transactional systems include clinical information systems, enterprise resource planning systems, supply chain solutions, patient billing and accounting, and many, many others.

Business intelligence software empowers users not only to access raw data but to report and analyze these data efficiently. Business intelligence tools do far more than simply deliver reports from a data warehouse. Instead they provide large numbers of people—hospital executives, physicians, nurses, employees and payers—secure and simple access to the right information to satisfy their unique requirements and the ability to share that information appropriately.

How business intelligence works

Through a series of interfaces, business intelligence tools extract data from relevant hospital technology systems, such as clinical systems, enterprise resource planning, radiology systems and census information. For example, if a hospital nursing manager wants to obtain information about nursing work hours per patient day, a business object tool could access data from the payroll and census systems to calculate the worked hours per patient day at the hospital, all within the context of the health care provider's information technology systems.

Business intelligence software enables both a "push and pull" strategy based on the information needed by hospital management. For example, financial or performance dashboards can be

pushed out to the desktops of hospital executives. Conversely, the information displayed may be pulled to provide greater, deeper intuition, as in the case of a chief medical officer seeking quality indicators, such as length of stay or performance sorted by diagnosis related group (DRG). The ability to push or pull information—automatically—is the true power behind business intelligence tools, as it enables hospital CEOs and other executives to make decisions on a more current basis to deliver better care and meet financial goals.

Applying business intelligence to achieve high performance

Providers can use business intelligence tools to manage business concurrently and take immediate action to address underperforming areas of the hospital and accrue the following important benefits:

- Effective measurement of performance
- Improved agility and responsiveness to change
- Alignment around common reporting and standards
- Increased organizational competitiveness

Business intelligence can be used to specifically measure and monitor the distinctive capabilities of high-performance providers: clinical quality, customer satisfaction, operational performance and financial longevity.

Clinical quality

Hospitals capture reams of clinical data every day through existing information systems. Business intelligence tools can extract these data and allow a provider to drill down into various quality metrics, such as the Centers for Medicare & Medicaid Services' core measures, to understand the factors that affect underlying performance

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issues. For example, a provider trying to reduce medication errors can cull information from the pharmacy and/or medication administration systems to dissect problems and make the necessary changes to reduce error. Through business intelligence software, a provider can set performance targets, such as a certain error rate percentage based on the number of medications administered, and then compare the data to see how many medications are given incorrectly.

In response to growing public pressure to reduce medical errors and increase quality care, providers also can use business intelligence software to assess performance. Using powerful, comparative clinical treatment and cost databases, hospitals can gather comprehensive data to track clinical performance and quality improvement initiatives and to identify trends and growth opportunities for patient care.

Armed with this valuable information, hospitals can analyze and compare complication, mortality, and readmission rates and outcomes against national, regional and peer group trends to improve clinical performance. For example, a not-for-profit, 547-bed academic medical center established a three-year road map for implementing a business intelligence strategy. The organization recognized the growing need for accurate and readily available information to manage the clinical area where they were experiencing increasing pressure to reduce variability and improve outcomes.

Customer satisfaction

Health care providers use a variety of clinical information systems to collect patient data. Providers that achieve high performance can measure the efficiency of their data collection by using business intelligence tools. For example, patients who repeatedly are required to provide basic patient information often grow increasingly frustrated. In addition, the more times patient information is

recorded, the greater the chance for record-keeping error. Business intelligence allows a macro view of the data collection process and can report the number of instances information is recorded and the number of times errors occur due to repetitive information gathering.

Market segmentation data gathered through business intelligence tools also can help hospitals cultivate relationships with patients and families over time. By creating a comprehensive log of customer interactions and by identifying important hospital customers and prospects, hospitals can create, for example, a mail-list generator for use in marketing campaigns that automatically measures return-on-investment (ROI) against campaign costs and revenue. The mail list might be used to send reminder cards to diabetics to regularly check insulin levels or to send heart-healthy recipes to cardiac patients. Hospitals benefit from increased customer loyalty and higher ratings of customer satisfaction.



Physician satisfaction also is key to provider high performance. Physicians can, after all, send patients away from hospitals they deem as lower in quality of care measures, such as emergency department patient flow or ambulatory care appointment wait times. High performers also try to increase their physician retention rates by offering technology support and connectivity to local physicians' offices.

Providers that are high performers also implement pay-for-performance programs that use federal government-supported and payer-supported incentives to encourage evidence-based practices that promote better outcomes. Performance measures also help providers increase public reporting, which better positions their services to the surrounding community.

Operational performance

Because the majority of provider information systems are siloed, collaborative information-sharing rarely occurs using outmoded decision-support software. Business intelligence tools, however, reside on top of these systems, allowing health care executives to look into separate systems in the interest of improving workflow and increasing efficiency. This view could allow a provider, for example, to redesign the patient management process to decrease the length of hospital stays and improve patient flow. Business intelligence information also could be applied to decrease admission wait times and reduce the number of patients who leave without being seen by a physician, thus boosting a hospital's operational efficiency.

Business intelligence tools also can leverage both internal and external operational and financial databases to allow hospitals and health systems to compare operational and financial



performance at the system, hospital and departmental levels to control costs. Organizations can then use such comparative data to identify key opportunities in cost utilization and productivity and to set fiscal and operational benchmarks to improve performance. The data also help providers set realistic budgets and financial plans. Armed with this valuable information, a hospital can initiate the precise degree of change essential to keeping its organization financially sound.

In one case, a multihospital health system with more than 55,000 employees operating in more than 20 locations wanted to update its technology architecture and strengthen decision-making. The extremely competitive market to improve margins required constant operational streamlining; business decision makers needed more powerful analytical tools to maintain market leadership. Accenture collaborated with the health system to create

a single platform that supported growth, decreased month-end close processing time and increased analytical capabilities for decision-making at the end-user level.

Financial longevity

Hospitals using outdated decision-support systems must wait—sometimes until the end-of-month close when information is populated into various financial databases—to run various performance analyses. Conversely, a business intelligence platform performs concurrent processing, so information is reported immediately. Business intelligence software extracts data from transactional systems on a more current basis, so providers can look at both historical and current information for predictive financial planning.

Business intelligence tools also can monitor timely financial indicators, such as day's outstanding receivables, and drill into clinical product or service line information to determine, for example, how a certain cardiology

program is performing. These tools can drive a hospital's financial performance by helping it determine financial outcomes in a timely manner.

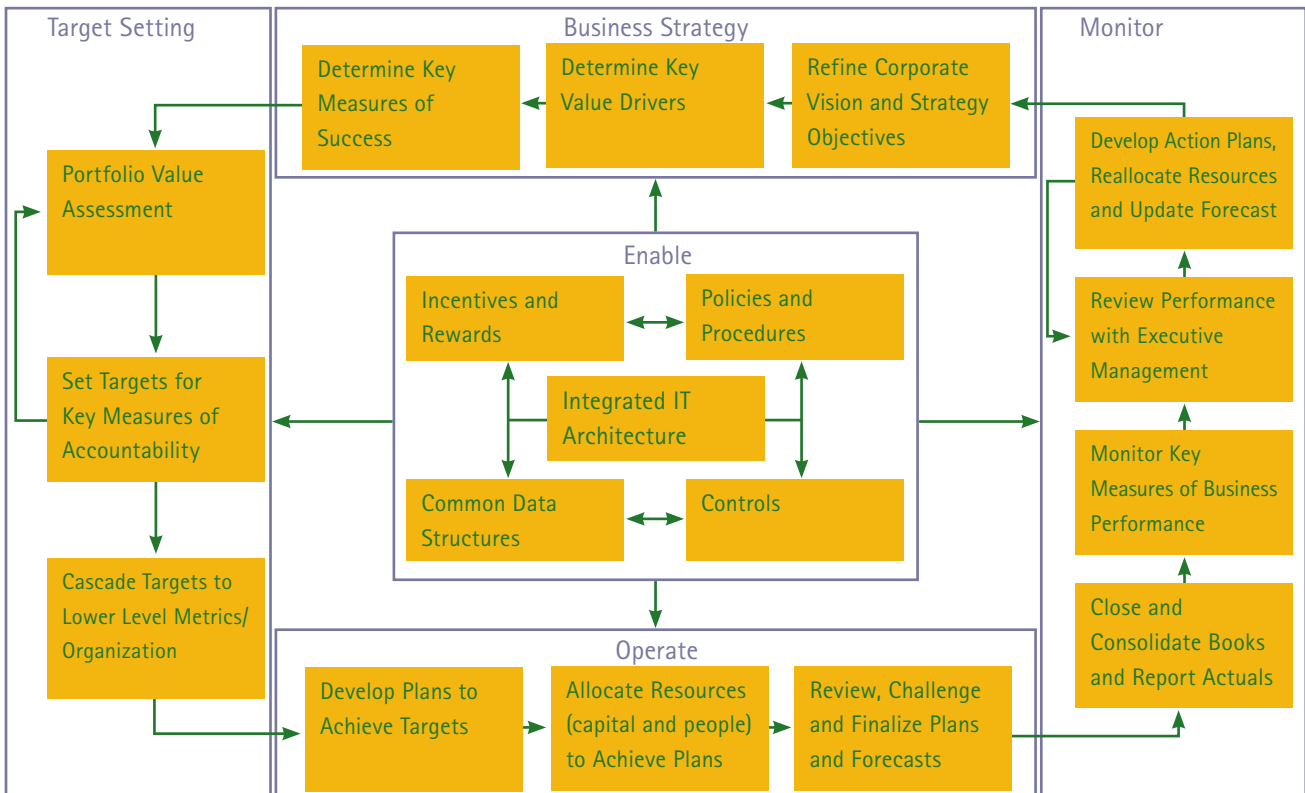
Hospitals also can use rich market segmentation data garnered through business intelligence tools—stratified by gender, age, socioeconomics and payer status—to identify how consumers will respond to marketing and when, where and how they will use specific services. Segmentation data help hospitals target consumers more effectively to maximize return on investment and boost the bottom line.

Hospitals seeking to truly achieve high performance and improve financially must look beyond this year's margin to big picture items like capital funding and the balance sheet to ensure that the organization's long-term focus is on financial success to support future generations of leaders and patients.

Accenture Business Intelligence services help health care providers use data as a strategic asset to transform information into action.

Figure 3. High-performance providers view business intelligence as a framework of integrated capabilities to drive direction from corporate strategy through to frontline operations.

Business Intelligence Enterprise Performance Management Framework



Industry trends affecting business intelligence

Several important industry trends will impact business intelligence functions as health care organizations increasingly adopt this new tool set, including:

- Emergence of new clinical programs and new models to deliver and manage health care that make a consolidated view of outcomes and operating results difficult for many providers.
- Increasing medical costs that make it harder for patients to afford quality care.
- Changes in compensation models driven by pay-for-performance that create new requirements for data capture within clinical and administrative workflow and the ability to aggregate and report outcomes against key performance indicators.
- Advances in information processing infrastructure that create the potential for greater information analysis, which is difficult to harness in practice.
- An increasing need for data sharing across health care applications and entities and incorporating health care data from many sources.
- Heightened focus on consumer health care information, both in terms of transparency initiatives and privacy and security requirements.

Enterprise performance management

Enterprise performance management provides a strategic framework for the business intelligence technology solution (see Figure 3). Accenture uses a proven enterprise performance management diagnostic tool to help providers develop a business strategy to measure organizational success, set targets to establish accountability and then push established measures out into an organization so all players understand what is being measured and what needs to be accomplished. Accenture also helps create a plan to put the right people, processes, capital and resources toward the business intelligence solution to help the enterprise performance management exercises succeed.

Accenture helps providers monitor success based on established targets, so the organization can determine progress, which enables it to adjust the operational plan on a regular basis. Whether at the executive level or at the nursing and physician level, enterprise performance management helps all hospital stakeholders understand how their individual targets fit into an overall strategic vision for the organization.

The enterprise performance management framework includes an integrated IT architecture, common data structures, established controls, and policies and procedures to ensure appropriate monitoring. Accenture has the technology expertise and strategic partnerships in place to integrate proven business intelligence tools that massage and manipulate raw data into useful information to help hospitals achieve high performance.

For example, using enterprise performance management and business intelligence solutions, a provider can ensure the CEO receives a daily online dashboard powered by business intelligence software. The desktop report can be configured to show 20 key indicators, such as volume, labor expenses, financial statements, daily net revenue, case mix indices and hospital length of stay. The dashboard helps the CEO measure achievement on a daily, weekly, monthly or annual basis. In addition, business intelligence tools allow the CEO to view all this information from one place and in a consistent format, eliminating the need to review multiple hard copy reports from all over the hospital to gather the same level of knowledge.

Enterprise metric management provides a faster, lower-cost, lower-risk approach for providers seeking insight to make better management decisions.

Business intelligence tools also can be used to generate a financial dashboard for a hospital CFO, showing days in accounts receivable, cash flow reports, days in accounts payable and other key indicators of a hospital's financial status.

Enterprise performance management, combined with a business intelligence solution, helps provider organizations identify and understand the key drivers for both current and future value. Hospitals can then take the steps needed to achieve high performance and deliver real value to the communities in which they operate.

Enterprise metric management

Enterprise metric management, a tactical business service focused on operations management, is designed for hospitals currently struggling to define key metrics or for those in the midst of organizational change. The Accenture Enterprise Metric Management offering includes proto-

type development of a metrics management system that provides simple, intuitive dashboards linked to key provider metrics. The system can be built upon a number of business intelligence vendor platforms, providing a faster, lower-cost, lower-risk approach to make better management decisions. The prototype dashboard can then be turned back over to the organization to implement and enhance or can be hosted by the Accenture Information Management group.

Looking ahead

While other industries have embraced business intelligence to advance reporting, planning and operational decision-making, health care providers are behind the curve in adopting and using this technology. Hospitals that embrace this diagnostic tool set can gain a competitive advantage for achieving and sustaining high performance.

Accenture can help health care providers integrate business intelligence tools to transform data into actionable information that helps them better measure, manage and improve how they do business. To this end, providers create a list of parameters to monitor and compare with established benchmarks to measure high performance. This list of measures can be compiled into an executive dashboard to show on a timely basis how a hospital is performing on key performance indicators, such as quality, customer satisfaction, operations and financials. These high-performance health care organizations will, in turn, drive business growth, manage costs more effectively and deliver higher levels of quality care.



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Accenture's Health & Life Sciences professionals deliver innovation and insight to both the private and public sectors of the marketplace, which includes integrated health care providers, health insurers, managed care organizations, public health organizations and pharmaceutical, biotechnology and medical products companies. With more than 6,000 professionals dedicated to serving the global Health & Life Sciences industry, Accenture is committed to working with clients across the industry to help them achieve and sustain high performance. We have worked with companies of all sizes, including 21 of 24 health care and pharmaceutical companies in the FORTUNE® Global 500. Our home page is www.accenture.com/h&ls.

About Accenture

Accenture is a global management consulting, technology services and outsourcing company. Committed to delivering innovation, Accenture collaborates with its clients to help them become high-performance businesses and governments. With deep industry and business process expertise, broad global resources and a proven track record, Accenture can mobilize the right people, skills and technologies to help clients improve their performance. With approximately 146,000 people in 49 countries, the company generated net revenues of US \$16.65 billion for the fiscal year ended August 31, 2006. Its home page is www.accenture.com.

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