Data Management:
A KEY BUSINESS DRIVER

With so much data now available, there are a number of opportunities and challenges related to developing actionable insights to drive business success.

Big data, smart data, and analytics are key concepts that continue to drive conversations and business decisions throughout the industry and throughout the value chain.

The opportunities associated with increased data availability, and big data in particular, expand as far as one's imagination will take a person. The ability to drive deeper, more pointed analytics, as well as measure performance and ROI across a broad spectrum of initiatives, improves dramatically as the data available for these uses increase and mature. That said, the mere notion of "more data" carries with it significant challenges in terms of data quality management and integration. Not to mention there needs to be education about the strengths and weaknesses of the data so that the insights derived are understood and used appropriately.

Analysts throughout the industry concur data management can often mean the difference between success and failure for an organization. The experts at SAS note that a company can actually drown in too much disorganized information, but with high-quality, well-managed data, it can gain a clearer picture of its business.

From data quality to data integration to master data management, data management solutions can help a company stop reacting to bad data and start using the right data to make a difference. But what makes data valuable? Its source? Its quantity? Its format?

No, SAS experts say the value of data depends on what a company does with it. And the first step in unlocking its potential lies in data management. When data managers are evaluating their current processes, they suggest asking a few preliminary questions to gain a baseline. Is the data easy to access, clean, integrate and store? Do you know which types of data are used by everyone in the organization? And do you have a system in place for analyzing data as it flows into the organization?

Starting on a Data Management Journey

Data access refers to the ability to get to and retrieve information wherever it is stored. Certain technologies can make this step as easy and efficient as possible so you can spend more time using the data — not just trying to find it.

Data quality is the practice of making sure data are accurate and usable for its intended purpose. This starts from the moment data are accessed and continues through various integration points with other data — and even includes the point before it is published or reported.

Data integration defines the steps for combining different types of data. Data integration tools help you design and automate the steps that do this work.

Data federation is a special kind of virtual data integration that allows you to look at combined data from multiple sources without the need to move and store the combined view in a new location.

Data governance is an ongoing set of rules and decisions for managing your organization's data to ensure that your data strategy is aligned with your business strategy.

Master data management (MDM) defines, unifies, and manages all of the data that are common and essential to all areas of an organization. Master data are typically managed from a single location or hub.

Data streaming involves analyzing data as they move by applying logic to the data, recognizing patterns in the data, and filtering it for multiple uses as it flow into your organization.

Data Trends for 2015

Business intelligence (BI) and analytics need to scale up to support the robust growth in data sources, according to the latest predictions from Gartner Inc. Business intelligence

Data Management Solutions — What's Top of Mind

Respondents to a recent IDG Research survey, as reported by SAS, rated the following as important when considering data management solutions:

- » **86%** Ability to integrate with existing systems
- » **86%** Ease of use
- » **78%** Scalability
- » **75%** Low cost
- » **75%** Ease of installation and setup
- » **69%** Ability to handle high-velocity or high-performance workloads
- » **56%** Availability of consulting expertise from the vendor

According to SAS, a unified data management strategy makes the most of these tools by implementing an enterprise's business processes and embracing the way employees work to make the most of data while keeping the business agile. It's this combination of tools, processes and practices that leads to a data-enabled organization that clearly understands which issues are most important to the business, what the objectives and drivers are, and which data is required for real-time decision making that provides value and returns.

Source: SAS

leaders must embrace a broadening range of information assets to help their organizations.

"New business insights and improved decision making with greater finesse are the key benefits achievable from turning more data into actionable insights, whether that data are from an increasing array of data sources from within or outside of the organization," says Daniel Yuen, research director at Gartner.

VIEWPOINTS

MARK WHEELDON
CEO
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Clinical Outsourcing: New Demands

In the past, pharmaceutical companies had huge biostatistics and data management departments. Outsourcing is increasing, which is bringing the need for tighter specifications end-to-end to match what will be collected against what is expected from a CRO partner. Outsourcing also increases demands up front. New standards are coming from CDISC and data need to match, therefore, the need for more testing. There is less time spent running trials and more time in specifying and testing what is actually delivered.

JOHN BUSALACCHI
Senior Principal
IMS Health

An Industry Transformation

EHR/EMR have the ability to transform the industry due to the information contained within the records and the decisions that this information can impact. The ability to understand patient journeys across a broad spectrum of care, with extremely detailed elements enables extensive analytics to occur. All stakeholders, from patients to caregivers to payers to manufacturers will continue to benefit from EHR/EMR as the data continue to mature and the ability to integrate the information with other key assets improves.

Data-Based Decisions

Data become valuable when used to inform the user and drive better decisions. In order for this value to be realized, the data must be trustworthy. Data management and technology services are the foundational elements to trustworthy data. As advancements in data management and technology continue the ability to integrate data appropriately becomes easier. Once the data are integrated and trustworthy, the analytics can create powerful, meaningful insights.

EBONI RUSSELL
Associate Director,
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The Role of Clinical Data Managers

Data managers are responsible for the mechanics of data collection, storage, protection, retention, analysis, and reporting. They may at times detect issues and trends, but their interest is limited to how these are reflected in analyses and reports. Meanwhile, central monitors are purposefully looking for trends so that potential issues can be addressed early in the study. In time, there will likely be more opportunities for integration and possibly hybridization between the two functions.

Clinical Data Manager Skills for Success

The ideal CDM has both a college degree (such as a B.S. or RN degree) and several years of experience in clinical research and data management. The job calls for a blend of technology expertise, proficiency with project management principles and tools, and strong communication, leadership, and analytical skills. CDMs must manage competing priorities and projects using their knowledge of data management systems, processes, and organizational complexities against a backdrop of rapid change.

RITESH PATEL
Executive VP,
Chief Digital Officer

Ogilvy CommonHealth

Personalizing Health

The opportunity to provide more personalized health-and-wellness guidance based on the data that are collected by the patient about their life will enable better patient outcomes and personalized medicine. The challenge will be the ability to store the data and provide a meaningful and visual tool to understand the data and take action and change behavior.

Physician-Patient-Data-Enabled-Interactions

The EHR technology being deployed in physicians' offices will fundamentally transform physicians' workflow and streamline the everyday clinical and administrative tasks a physician conducts. It will also fundamentally change the way physicians and patients connect and communicate with each other. A central record for the patient will enable the physician to have instant access to both clinical and health-and-wellness information on the patient.

DR. JULES MITCHEL
President
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The Key to Regulatory Compliance
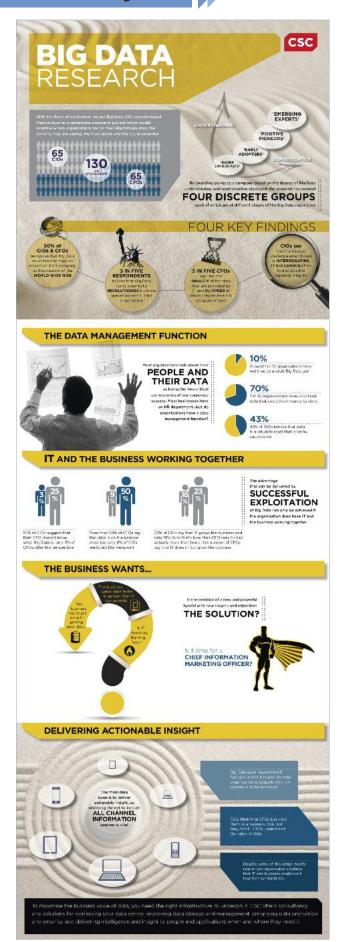
When original data are captured through validated electronic systems, there is no need to perform source document verification (SDV). The key to regulatory compliance then becomes the availability of validated, independent, contemporaneous copies of source records, so that regulators can compare the data within the clinical trial database against original records at the clinical site. Data managers can now focus on whether the protocol is being followed, and whether data make sense and are consistent across sites.

With the right strategy, everything falls into place

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WORLDWIDE CLINICAL TRIALS
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"Different technology vendors, especially niche vendors, are rushing into the market, providing organizations with the ability to tap into this wider information base in order to make sounder strategic and more prompt operational decisions."

In a recent report, Gartner outlined three key predictions for BI teams to consider when planning for the future.

Trend No. 1: By 2015, 65% of packaged analytic applications with advanced analytics will come embedded with Hadoop.

Gartner says organizations realize the strength that Hadoop-powered analysis brings to big data programs, particularly for analyzing poorly structured data, text, behavior analysis and time-based queries. While IT organizations conduct trials over the next few years, especially with Hadoop-enabled database management system (DBMS) products and appliances, application providers will go one step further and embed purpose-built, Hadoop-based analysis functions within packaged applications. The trend is most noticeable so far with cloud-based packaged application offerings, and this will continue.

"Organizations with the people and processes to benefit from new insights will gain a competitive advantage as having the technology packaged reduces operational costs and IT skills requirements, and speeds up the time to value," says Bill Gassman, research director at Gartner. "Technology providers will benefit by offering a more competitive product that delivers task-specific analytics directly to the intended role, and avoids a competitive situation with internally developed resources."

Trend No. 2: by 2016, 70% of leading BI vendors will have incorporated natural-language and spoken-word capabilities.

BI/analytics vendors continue to be slow in providing language- and voice-enabled applications. In their rush to port their applications to mobile and tablet devices, BI vendors have tended to focus only on adapting their traditional BI point-and-click and drag-and-drop user interfaces to touch-based interfaces. Over the next few years, BI vendors are expected to start playing a quick game of catch-up with the virtual personal assistant market. Initially, BI vendors will enable basic voice commands for their standard interfaces, followed by natural language processing of spoken or text input into SQL queries. Ultimately, "personal analytic assistants" will emerge that understand user context, offer two-way dialogue, and (ideally) maintain a conversational thread.

"Many of these technologies can and will underpin these voice-enabled analytic capabilities, rather than BI vendors or enterprises themselves developing them outright," says Douglas Laney, research VP at Gartner.

Trend No. 3: By 2015, more than 30% of analytics projects will deliver insights based on structured and unstructured data.

Business analytics have largely been focused on tools, technologies, and approaches for accessing, managing, storing, modeling and optimizing for analysis of structured data. This is changing as organizations strive to gain insights from new and diverse data sources. The potential business value of harnessing and acting upon insights from these new and previously untapped sources of data, coupled with the significant market hype around big data, has fueled new product development to deal with a data variety across existing information management stack vendors and has spurred the entry of a flood of new approaches for relating, correlating, managing, storing, and finding insights in varied data.

"Organizations are exploring and combining insights from their vast internal repositories of content — such as text and emails and (increasingly) video and audio — in addition to externally generated content such as the exploding volume of social media, video feeds, and others, into existing and new analytic processes and use cases," says Rita Sallam, research VP at Gartner. "Correlating, analyzing, presenting, and embedding insights from structured and unstructured information together enables organizations to better personalize the customer experience and exploit new opportunities for growth, efficiencies, differentiation, innovation, and even new business models." PV

Upcoming Showcase Features

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OCTOBER: Supply Chain

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