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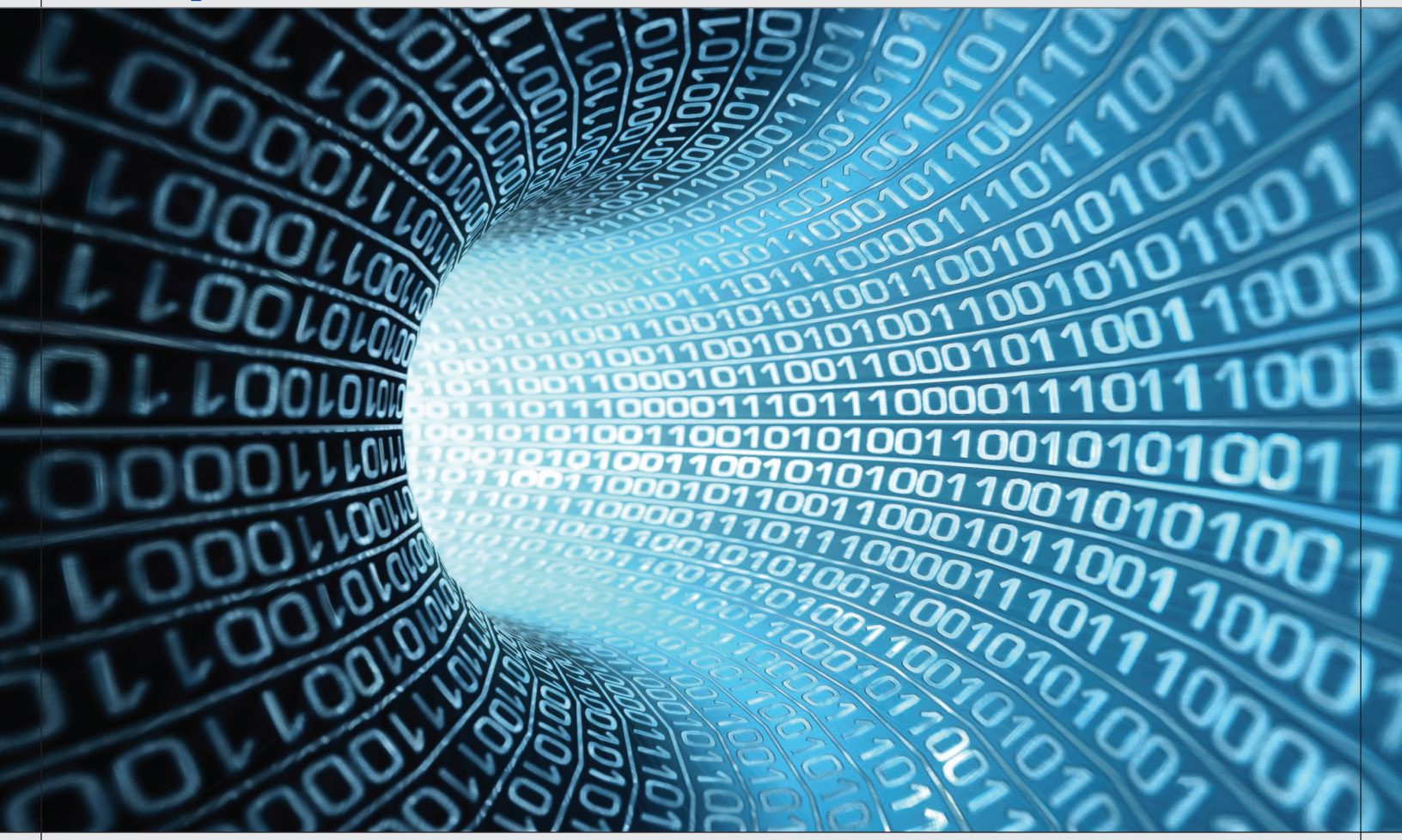
Managing Information in the Enterprise: Perspectives for Business Leaders



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KEY FINDINGS

What are the data challenges facing the world's top companies? A recent Forbes Insights survey of more than 200 business and information technology (IT) executives at leading global enterprises uncovered significant trends, misconceptions, and underlying roadblocks to better information management:

- Data-related problems cost the majority of companies more than $5 million annually. One-fifth estimate losses in excess of $20 million per year.
- 95% of organizations agree that strong information management is critical for business success.
- Line-of-business executives and IT frequently disagree about the source of data-related problems and the potential solutions.
- Fragmented data ownership is the single biggest roadblock to an enterprise information management program.
- CIOs and their IT managers need to communicate more frequently and effectively about information management projects and their benefits to lines of business.

Turning endless piles of data into timely, actionable information now dominates both business and IT agendas. This new focus means companies must apply rigorous strategic thinking to information management both to contain costs and retain their competitive advantage. It also means a much greater emphasis on business processes and tools used to assure data quality in the enterprise.

With the data growth rate accelerating at a rapid rate, businesses must act now if they hope to leverage data as a strategic asset.

Forbes Insights, in association with SAP, surveyed more than 200 business and IT executives about the data challenges their organizations are facing. There was widespread agreement that information is a strategic asset for an enterprise and that quality data is paramount, yet poor information may be costing companies millions of dollars each year. However, beyond that concurrence, there exists a disturbing divergence between IT professionals and line-of-business executives on how to best manage information in the 21st century.

First, business and IT managers appear to disagree on the details of data quality issues. The two groups also don't agree on who "owns" the data—users or IT. There's also a communication gap about how information management is being handled within organizations. And while there is general agreement about the cost of poor data quality, organizations are still unclear about how they can measure ROI accurately for solutions available in the market.

The survey results point to specific areas where IT and line-of-business groups need to work together to solve their data quality problems. They give top management the economic incentive to push for strategic information-management solutions. And they show the common ground IT and lines of business share that can be the foundation for an effective information strategy for the business.

Information Management: The Difference Between Knowing and Doing

Organizations clearly believe that information is the strategic asset that will set them apart from their competitors and drive their success. It's not just the opinion of the IT department either, as line-of-business executives see information as integral to achieving their business goals.

Fully 85% of survey respondents agreed that their organizations treat information as a strategic asset. (Fig. 1) And nearly all (95%) go the next step, believing that information management is essential to business success.

This is definitely true at the world's leading semiconductor manufacturer, Santa Clara, Calif.-based Intel Corp. "Information is a major component of our intellectual property and gives us an advantage in terms of manufacturing effectiveness, quality, and product capability," said David Aires, general manager of IT factory automation.

An executive at Petrobras, the Brazilian oil producer, echoed Aires' view. "Petrobras believes information and knowledge are a competitive differential, therefore, strategic assets."

FIGURE 1. Executives' views on information management

> "Information is a major component of our intellectual property and gives us an advantage in terms of manufacturing effectiveness, quality and product capability."
>
> —David Aires, Intel

Other companies are building their IT strategies to empower lines of business to make faster, more informed decisions. As Roger Parks, CIO at J.R. Simplot Company, a Boise, Idaho-based agribusiness and food manufacturer and one the largest private companies in the U.S., observed, "Information management does have a very strategic role in our company and is an important part of our overall IT approach and strategy. We recognized several years ago that converting the right business data to information can provide us with a competitive advantage and we must view and manage information as a strategic corporate and business asset."

The big question is, if managers agree that information management is a strategic differentiator, and access to information as an essential part of the decision-making process, why are information management initiatives often not well communicated or overlooked?

TAKING ACTION

- Establish information management's priority in your enterprise.
- Raise the visibility of your information management initiatives and successes.

How Data Quality Affects Business Process Efficiency

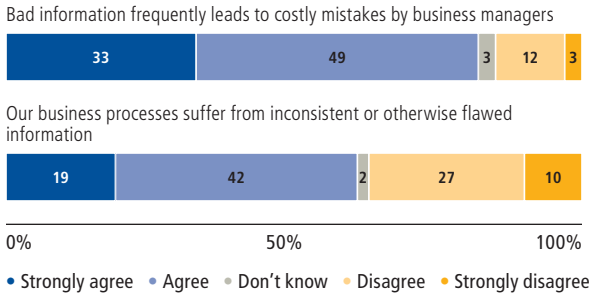
Many times, data quality issues center around master data. Master data includes all core business information used across an enterprise and other attributes such as metadata (i.e., the data about the data). This data must comply with an organization's governance policies (i.e., how the data is controlled and handled).

Hood Abu Bakar, general manager, information and communication technology at Kuala Lampur-based MISC, the world's third largest shipping company, said, "If data quality is suspect, users will not have the confidence in the data and might make decisions that [could] affect the bottom line or expose the organization to unnecessary risks. The main issue that we have faced with regards to data quality is with the master data. We have a number of partners and stakeholders that might call the same item by different names, which in turn will cause some mismatches and inefficiency. We enforce certain controls to ensure that these errors are kept to a minimum if we can't eliminate them. We also have periodic reviews to ensure that the data quality is sufficiently high to ensure confidence in the system."

> "If data quality is suspect, users [might]… expose the organization to unnecessary risks."
>
> —Hood Abu Bakar, MISC

Few companies escape data quality pitfalls. Richard West, president of Peachtree Data Inc., Duluth, Ga., which cleanses marketing mailing lists for hundreds of companies yearly and processes more than 1 billion records per month, observed that even the most sterling consumer brands his company works with have data quality problems, noting that five to seven percent of each new customer's records are wrong.

FIGURE 2. The consequence of poor data quality



Most organizations have taken the critical first step of identifying their data problems. According to the survey, 82% of respondents agreed that bad information leads to costly mistakes by business managers and 61% agreed that business processes suffer from inconsistent or otherwise flawed information. (Fig. 2)

TAKING ACTION

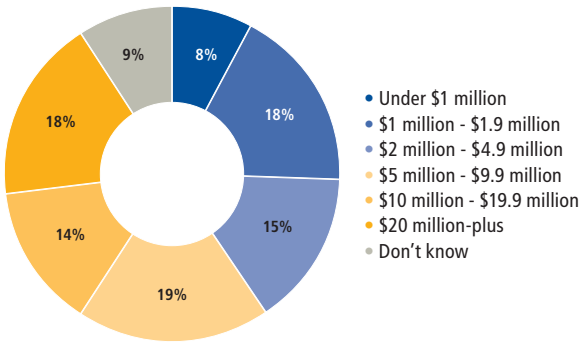
- Assess the state of your data quality, starting with high-priority elements, such as supplier, customer, material, or product data. Does the quality meet business expectations?
- Evaluate how incorrect or ambiguous data is affecting your company's ability to make smart, informed decisions.

The Cost of Poor Data Quality

No organization has absolutely perfect data—nor is that practical. All sizes of companies are bound to experience a data quality problem eventually. Companies may duplicate their data gathering, incurring unnecessary expenses. Bad data can erroneously inform decision-makers, leading to pricey mistakes. And data entry errors can keep you from knowing what your customers have bought from you or cause you to ship products to the wrong location.

Few among those surveyed thought data quality problems did not hit their enterprise's balance sheet. In fact, a majority of respondents said the yearly damage to the bottom line due to data quality problems exceeded $5 million. Nearly one-in-five (18%) estimated the annual cost to be more than $20 million. (Fig. 3)

FIGURE 3. What do you estimate that data-related issues cost your company annually?



A majority of respondents said the yearly damage to the bottom line due to data quality problems exceeded $5 million.

Despite the widespread awareness of the high price of low-quality data, initiatives to improve data quality are not necessarily easy to measure in classic budgeting logic because there is often no single, well-defined goal that can be achieved and measured. In many cases, the benefit of enterprise information management is the day-to-day reduction in errors in business decisions and the resulting operational improvements (such as greater worker efficiencies) that are gained for the business.

This can be frustrating to IT managers well versed in budgeting projects. (See sidebar: Getting to Master Data Management.) However, given the broad consensus on the strategic value of information and the acknowledgement of

the unacceptably high cost of poor data quality, effective leadership can readily help IT and lines of business identify and resolve an enterprise's key data quality issues as part of an overall information management strategy.

TAKING ACTION

- Determine how much data quality issues cost your company annually. Start with an examination of a single business task/process, such as supplier on-boarding, product content sharing with resellers, or creating a customer record in CRM.
- Determine the impact of data-related issues on current analytical or operational systems such as business intelligence (BI) or enterprise resource planning (ERP). Find out what helps staffers in these areas do their work, what obstacles they face, and how they handle problems.

NOKIA: GETTING TO MASTER DATA MANAGEMENT

At Nokia in Espoo, Finland, Neil Storkey, senior enterprise architect, saw the need for a master data management (MDM) project. And he's had experience rolling out MDM at his previous company. MDM is a vital element of an overall enterprise information management initiative, assuring that a single version of the truth exists for critical areas like part numbers, supplier cost data, customer information, and more. However, Storkey warned, knowing something is important and being able to make a traditional business case for it are not the same thing.

"I believe this is because the ROI in the business case for MDM is very tenuous and extremely difficult to articulate," he said. "I spent about a year trying to convince my leadership at my previous company that I would achieve value with the investment in an MDM initiative. Each time the value proposition was challenged and subsequently knocked back."

The problem, Storkey pointed out, is that "MDM actually does not cut costs directly because master data is a prerequisite to all transactions within an enterprise. There is nothing within the enterprise that does not build on master data. So any value is to be gained within the transactions residing within the operational systems. Also MDM is all about improving quality of data and moving the cleansing activities closer to the point of creation. Therefore, MDM is valued by way of the operational data quality as witnessed in the transactions and downstream reporting applications."

Further, he said, "the value of MDM is in the quality, and through MDM a quality issue is identified, typically the corrective action is taken in the operational system, and plans put in place to address the longer term issue within the MDM system. That means that MDM is not always attributed with the cost avoidance or savings."

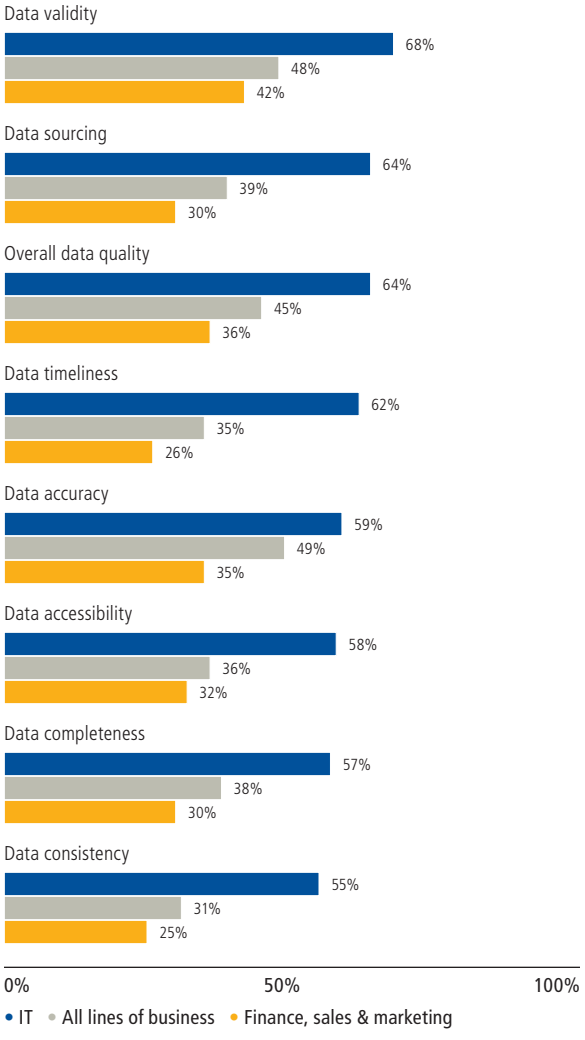
> "There is nothing within the enterprise that does not build on master data."
>
> —Neil Storkey, Nokia

To get the go-ahead for the project, Storkey had to change the argument for MDM by showing "the consequence of not putting in place MDM. By clearly showing the consequences of poorly managed master data I was then able to convince leadership that the impact of not doing MDM was significant costs resulting from inconsistent processes, duplication of effort, siloed views, and consequently inaccurate decisions later in the process."

Pointing Fingers: IT and Business Executives Disagree

While many IT and line-of-business executives in the survey agreed that information in their organizations has its problems, they differ widely on where and why these data quality issues exist. While such differences in opinion are not surprising, they may prove to be significant hurdles for companies that try to improve data quality and the strategic value of information for the business.

FIGURE 4. How good is your data? (% of respondents rating data quality high—6 or 7 on a 7-point quality scale)



To succeed, organizations should consider taking steps to ensure both groups can be held accountable. But this may be easier said than done.

Line-of-business executives have a lower opinion of data quality than IT respondents. Respondents were asked to rate the quality of their organizations' data on a variety of attributes. Consistently, IT respondents gave their organizations higher marks than did line-of-business executives. (Fig. 4) Even more telling, among lines of business, respondents in the data-centric finance, sales and marketing groups were the least likely to give high marks for data quality.

There are other instances where IT does not appear to have an understanding of the data quality issues facing lines of business. With the exception of information access (See sidebar: Lack of Information Access), there was little agreement between business and IT executives on the sources of data quality problems experienced by lines of business. The biggest data quality issue identified by business executives

LACK OF INFORMATION ACCESS: A DATA QUALITY ISSUE FOR ALL EMPLOYEES… NOT JUST TOP MANAGEMENT

No manager wants to be in the crosshairs of a CEO, managing director, or board member who feels he or she has not been given access to relevant information. So that may be why, when survey participants were asked specifically about problems "top management" encounters, "lack of access to critical information" was the top data quality issue.

Respondents were also asked whether all line-of-business managers—those a management layer or two below top management—had access to accurate information about all substantial risks to the business. Here, IT respondents had a rosier picture regarding data accuracy than the line-of-business managers themselves. This could indicate that users may not be alerting IT to potential data accuracy issues, possibly giving IT a false sense of the ubiquity of information access.

IT managers see this as a challenge for their companies. "The biggest hurdle to delivering the right kind of information is assessing exactly what kind of data and what kind of presentation will help our people improve their personal effectiveness and ability to detect and solve problems in our operations," said Intel's Aires. "The difficulty lies in making the right connections between programmers and the people who use the data to run the business."

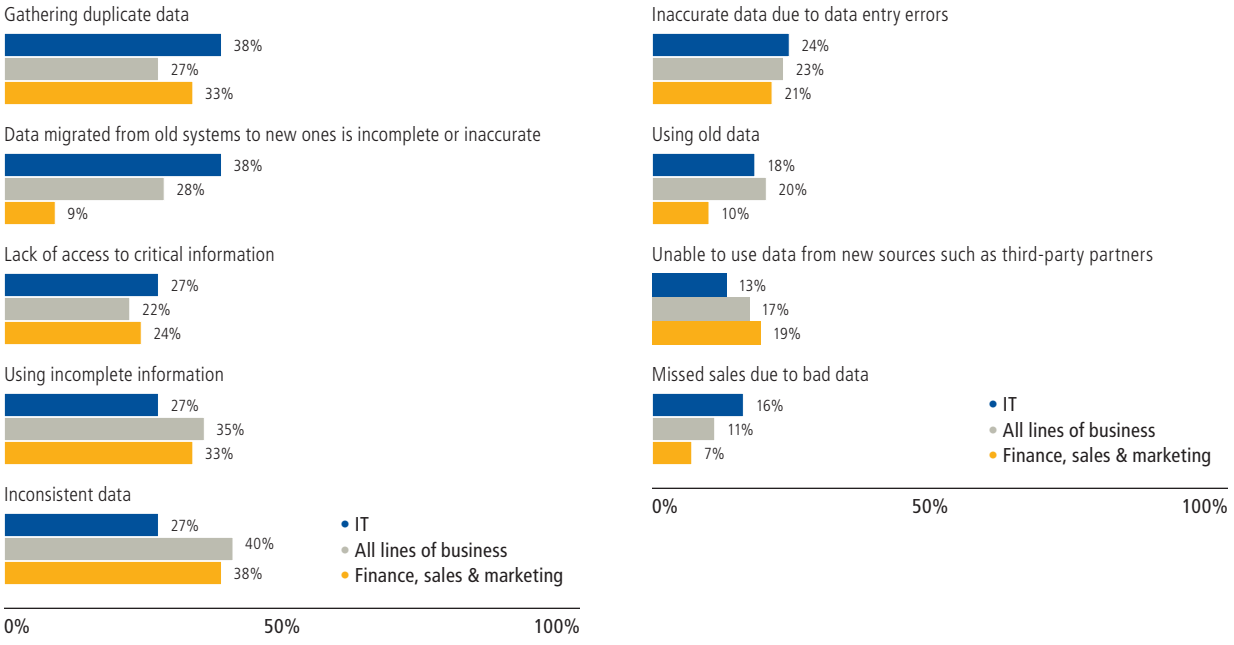
in the survey was inconsistent data (40%). On the other hand, IT respondents took a more technical approach, citing gathering of duplicate data (38%) and data migration (38%) as the major problem areas. (Fig. 5)

These differences about where data quality problems reside could derail necessary work to improve data quality. That is, while agreeing that problems exist is vital, obtaining agreement on where to focus efforts might prove to be difficult as powerful individuals and departments in an organization push for solutions that best address their specific issues rather than those of the enterprise as a whole.

TAKING ACTION

- Establish an executive sponsor for a data governance committee, and encourage active participation in the committee.
- Engage key IT and line-of-business stakeholders to get a clear picture of where data quality issues exist and how resources can be prioritized.
- Mitigate arguments on "perfect" data quality by focusing instead on the integrity and use of the information.

FIGURE 5. What are the primary quality of data issues experienced by line-of-business managers at your company?



Disagreement Over Data Ownership Is a Top Issue

Organizations appear to be wrestling with the natural boundaries between the data users in a line of business and the data management professionals in IT. Business users generally consider the information and how it is managed to belong to them. While IT managers largely concede that information is the users' not theirs, they take the position that data and information management systems are under IT's purview. This differing perspective puts IT and business executives in conflicting camps, particularly when it comes to data quality.

The survey bore this out. Nearly four-fifths of IT executives believed they were responsible for data quality, while more than half of business executives thought those who enter and use the data have primary responsibility. The ownership issue is even more pronounced between IT and finance, sales, and marketing executives. (Fig. 6)

When asked where responsibility for data quality resided, 79% of the IT managers said it was with IT, but 74% of the finance, sales, and marketing, respondents said it was their own job to assure data quality.

So, it's not surprising that both IT and all line-of-business respondents agreed that the number one roadblock to establishing an enterprise information management program is the fragmentation of data ownership. But each group was looking at the other as responsible for the roadblock. (Fig. 7)

This seems to be the case at many companies. "Each employee must ensure that the data input in the different systems is correct," said Petrobras. "The IT professionals are in charge of ensuring the availability, integrity, and confidentiality of the information entrusted to them."

Collaboration between lines of business and IT is essential if information management initiatives are to progress. As Nokia's Neil Storkey said, an abiding rule for such projects to succeed is to "communicate, communicate, communicate."

TAKING ACTION

- Discuss in a data governance council what can be done to gain the right balance between IT and line-of-business involvement in your information management initiatives.
- Consider tying manager performance evaluations to their collaboration on executive-sponsored information management projects.
- Clearly delineate responsibility and accountability in all areas of data management.

FIGURE 6. Where does primary responsibility for quality of data reside at your organization?

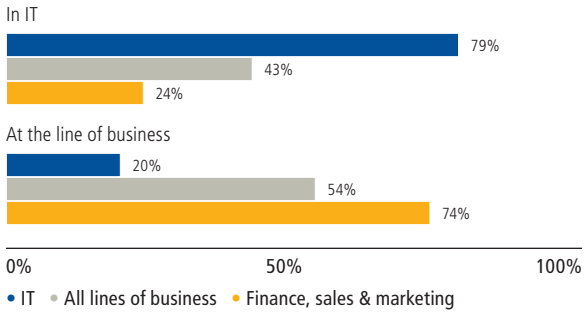


FIGURE 7. What are the major business roadblocks to establishing an enterprise information management program in your organization?

Knowledge and Communication Gap Contributes to Problems

Without deep collaboration between IT and line-of-business managers, it can be hard for organizations to be on the same page in terms of information management projects and their value to the enterprise. As J.R. Simplot's Parks explained, "There is a gap, quite honestly. One factor in why there is a gap could be attributed to not having a single or common definition of enterprise information management. It's similar to business intelligence, where there are variations of the definition of BI. Some CIOs fail to communicate with and educate others about information management within their enterprise."

The survey data underscores that business executives are often not aware of many of the top information management programs at their organizations. For example, according to IT managers 51% of their companies were engaged in data quality management work. But only 25% of business executives said their organizations had similar projects. (Fig. 8) The results clearly indicate that there is little communication about data quality work in progress when the lines of business are not aware of or involved in the solutions.

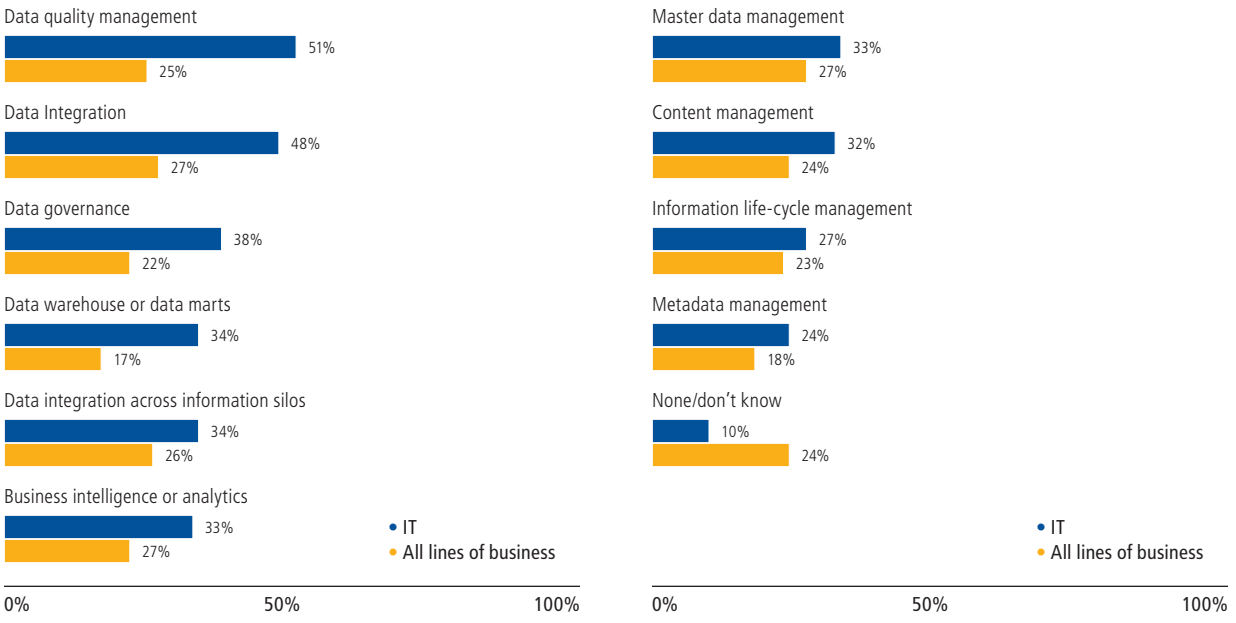
This knowledge and understanding gap between business and IT respondents may point to communication lapses on the part of IT executives with their line-of-business counterparts. And vice versa. Increased collaboration on data quality initiatives and overall enterprise information strategy could go a long way to help improve the situation for the entire business.

Some companies have addressed this gap. At Petrobras there is a standing committee whose charter is to advise senior management about information policies "in consonance with corporate strategies." And at J.R. Simplot, Parks has installed direct reports to his department within all lines of business in the company to ensure that a steady flow of project information is going back and forth between the two groups.

TAKING ACTION

- Are line-of-business managers aware of the benefits of information management efforts? Engage business managers on the data governance committee. Educate all managers about the impact of information quality on business operations. Enable them to be accountable.
- Ensure the IT department keeps lines of business apprised and involved in current or future information management project developments.

FIGURE 8. The knowledge gap: Which of the following projects are part of your information management program?



The State of EIM Today

Despite differences in perception about data ownership and information management programs, many companies are looking at enterprise information management (EIM) as a way to gain greater control of data quality and consistency. Of the organizations surveyed, 45% confirmed they have some type of EIM program in place, and 31% said they are currently developing one. (Fig. 9)

It is not surprising that data integration, data quality management, and master data management are among the top projects currently implemented as a part of an enterprise information management program. (Fig. 10) These markets recently have experienced substantial growth in conjunction with a rapid maturity of available technology.

Interestingly, finance, sales, and marketing executives ranked business intelligence (BI) or analytics as their top information management project. This may indicate these business executives view a BI system as their vehicle for leveraging information as a strategic asset. What they may not fully understand is that data integration, data quality, and master data management are enabling programs used in support of BI solutions.

In addition, most organizations will increase or maintain budget allocation for EIM program funding, according to the survey. (Fig. 11) This trend indicates the strategic importance of information management despite the economic challenges faced by organizations. Respondents in the Asia Pacific and Latin America markets had the highest planned budget increases for information management initiatives.

FIGURE 9. Does your organization have a dedicated enterprise information management (EIM) program in place today?

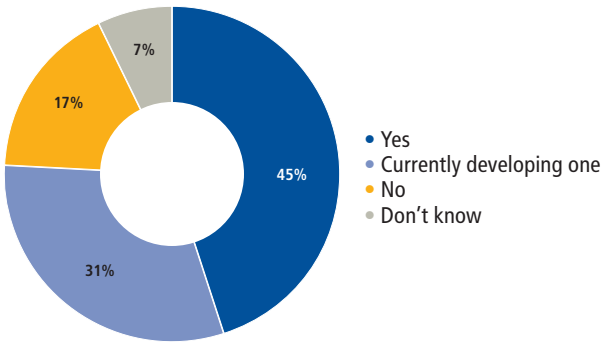
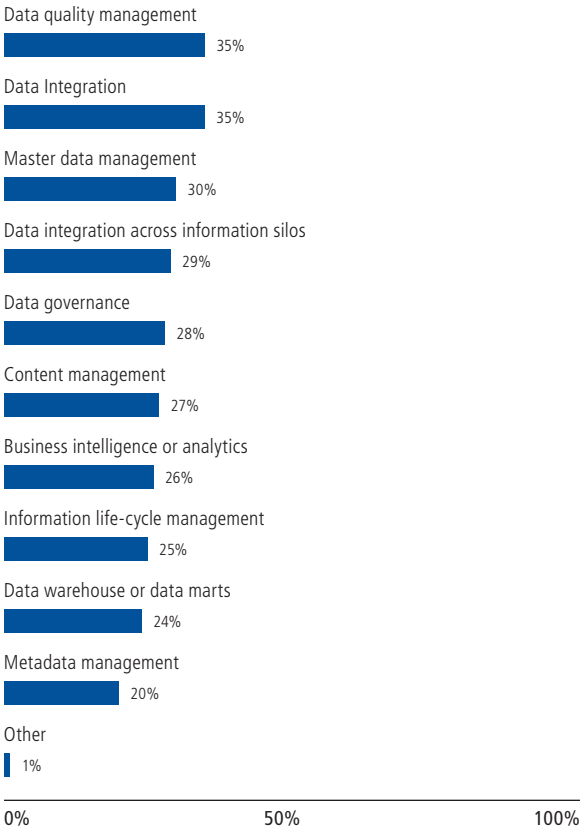


FIGURE 10. If you currently have an EIM program in your organization, which of the following projects are part of that program?



"Our decentralized structure has made it difficult to get a complete, consistent representation of data consolidated in a way suitable to analyze business performance."

—Bob Tingstrom, Bio-Rad

FIGURE 11. EIM budget allocations for 2010

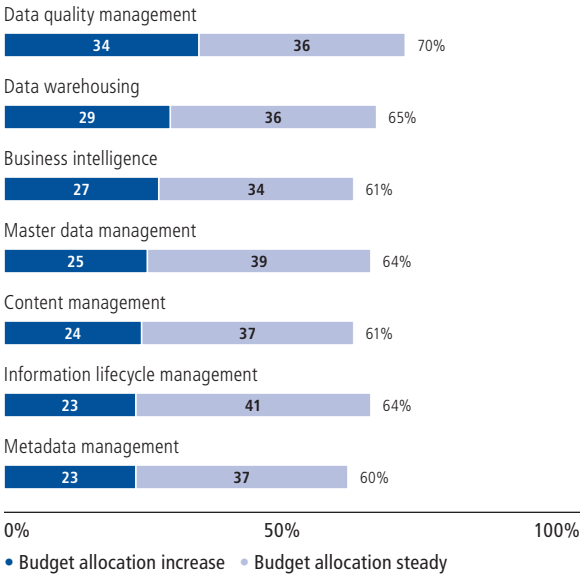
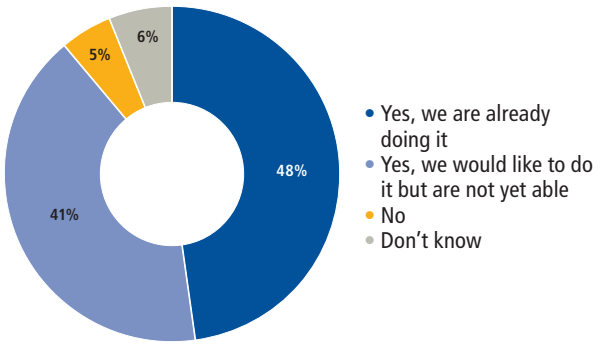


FIGURE 12. Would your organization benefit if it could organize and analyze unstructured data (i.e., emails, call center logs, images, audio/video files, etc.)?



The next wave of information insight may be in the area of unstructured data. Many information management initiatives are undertaken for an organization's structured data found in ERP, CRM, and database-centric applications. Yet 80% of the enterprise information is captured in an unstructured data format such as email, documents, and log files. In the survey, 89% of organizations agreed that this new source of information would be beneficial if it could be organized and analyzed. (Fig. 12) And, 48% said they are already doing it. Which half of the innovation wave are you in?

TAKING ACTION

- Consider how you are allotting your budgets for information management.
- What is your organization doing to capture intelligence from unstructured data?
- Determine where master data will be centrally created and managed and how much control and which attributes should be retained at the local level.
- Evaluate the efficiency with which your employees are able to locate documents related to the business processes they administer.

MAKING INFORMATION MANAGEMENT HOLISTIC

One of the biggest hurdles to enterprise information projects is a decentralized management structure. While such an organization is often intentionally designed to be more responsive to market conditions, it can also emerge unintentionally as a result of growth by acquisitions.

Bio-Rad Laboratories of Hercules, Calif. has thrived as a decentralized organization for more than 50 years. However, as Bob Tingstrom, enterprise reporting manager, said, "We developed silos of technical expertise through company acquisitions and our decentralized organization. These silos have been a bit of an impediment to consolidate information for presentation and consumption."

As a result, he said, "Completeness of data has been a challenge. Our decentralized structure has made it difficult to get a complete, consistent representation of data consolidated in a way suitable to analyze business performance."

Tingstrom added that line-of-business leaders "understand the value of having high quality information but struggle to understand the complexity and commitment to put a data governance program and organization in place. And with our decentralized IT structure, local staff are focused on the data quality in their applications, not necessarily holistically for the enterprise."

But that understanding gap has been narrowing inside Bio-Rad and the company is working on data quality and integration "to help break down the silos and build capacity to respond more quickly to information demands."

Your Next Move

Survey respondents overwhelmingly saw the strategic importance of managing information as an enterprise asset. They recognized that the impact of not doing so is costing their organization millions of dollars annually.

The survey also uncovered that the biggest challenge to launching EIM programs is not getting funding. Rather, it is people and process related. Data ownership fragmentation and a lack of leadership were among the top roadblocks to EIM. IT and lines-of-business leaders both feel they own the data, yet many business executives are not aware of the solutions being implemented by IT to prepare data for enterprise use.

WHAT CAN AN ORGANIZATION DO?

- Identify a strategic system that drives a critical business process that is experiencing inefficiency (such as long lead times compared to industry averages, or cost overruns).
- Quantify the financial impact of poor quality information on these systems. For example, how much did a data-related mistake in budgeting cost your company?
- Establish a limited-scope information management initiative to tackle a targeted problem; involve both IT and lines of business from the beginning.
- Use this experience to build repeatable expertise, policies, and competencies to drive change across other applications and initiatives throughout the company.

METHODOLOGY

The information in this report is based on the results of a survey conducted in January 2010 by Forbes Insights in association with SAP. Forbes Insights received responses from 219 executives and decision makers at leading global enterprises in North America (37%), Europe/Middle East/Africa (28%), and Asia/Pacific (20%), and Latin America (15%). In addition, one-on-one interviews were conducted with another dozen executives at companies of this size.

More than two-thirds of respondents (68%) held C-level titles, including CEO COO, CFO, and CIO, with the remaining having titles of senior vice president, vice president or director. In terms of functional role, 37% of respondents were involved in IT, and the remaining represented various lines of business, including business operations (19%), sales and marketing (14%), and finance (11%), among others.

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