IBM Institute for Business Value

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Overview

The IBM Institute for Business Value provides a business process benchmarking service that helps clients measure their current state and compare their performance against peers; these benchmarking services can be provided as part of a process transformation initiative or similar engagement.

A recent benchmarking program survey of 701 IT managers provided insights about their organizations' practices and performance. Statistical analysis of the data provides an indication of the benefits an organization can gain through superior information management practices and analytics capabilities.

Benchmarking study demonstrates IT enablers and benefits from analytics capabilities

Introduction

Organizations are increasingly focused on making data easier for business users to leverage, so that information can be used to optimize business decisions. The 2010 IBM Global CEO Study found that insight and intelligence was a top focus for more than three-quarters of CEOs.[1] The IBM Global 2011 Chief Marketing Officer (CMO) Study found that the vast majority of CMOs plan to increase their use of customer analytics in the next 3-5 years, but most of them feel under-prepared to manage the explosion of data.[2] In turn, CIOs are responding to these demands from the business: when asked where they will focus IT to help their organization's strategy over the next five years, most CIOs identified insight and intelligence as the top priority.[3]
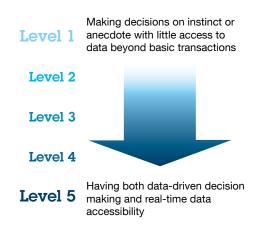
The 2011 CIO Study found four different patterns of business expectations for IT within organizations ("CIO mandates"):

- *Leverage mandate:* Streamline operations and increase organizational effectiveness
- *Expand mandate:* Refine business processes and enhance collaboration
- *Transform mandate:* Change the industry value chain through improved relationships
- *Pioneer mandate:* Radically innovate products, markets and business models

All of the mandates include responses to "Big Data." Organizations with Leverage mandates are focused on internal information sharing and leveraging data to provide business and IT metrics. Expand mandate organizations are seeking to use data to make better decisions.

Analytics Maturity Level

Level 1 — Making decisions on instinct or anecdote with little access to data beyond basic transactions

Level 2

Level 3

Level 4

Level 5 — Having both data-driven decision making and real-time data accessibility
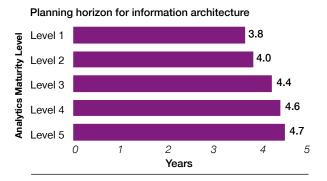
Planning horizon for information architecture

Figure 1: Comparison for respondents within each analytics maturity level, of the mean length in years of information architecture planning horizon.

Those with a Transform or Pioneer mandate are particularly focused on using data to enhance relationships, to form the basis for predictive intelligence to fundamentally change the business and to search for new sources of revenue.

A recent IBM benchmarking study provides additional insight for IT organizations seeking to improve their information management and analytics capabilities. In that study, 701 IT managers from Europe and North America revealed their organizations' capabilities, practices and outcomes.

The results demonstrate that analytics capabilities are enabled by practices including a longer planning horizon for information architecture, linkage of data sources, management of information at the enterprise level and more centralized administration of core enterprise support applications. In one indication of benefits, higher revenue per FTE was associated with more employee access to management reports designed to help them optimize performance.

These enabling practices and capabilities tend to involve rapidly increasing demands for physical storage. The respondents in our study appear to be coping with this by investing more of their total IT spend in capital assets and looking to cloud as a potential solution.

To capture analytics capabilities, study respondents rated the overall analytics maturity of their entire organization on a scale of 1-5. Level 5 was the highest maturity level, defined as having both data-driven decision making in the organization's culture and real-time data accessible as needed. At the lowest end of the scale, level 1 was defined as making decisions being on instinct or anecdote and having little access to data beyond basic transactions.

The results of these self-rated analytics maturity levels were correlated against other questions in the survey to identify key enabling practices and distinctive outcomes.

Respondents indicating higher analytics maturity tended to plan further ahead for their information architecture, with a mean planning horizon of 4.7 years, as opposed to 3.8 years for the lowest analytics maturity level (see Figure 1).

Fully linked electronic information sources were another key enabler (see Figure 2).

Unlinked information sources or repositories in our business

Individual sources or repositories are linked, but the majority remains separate

Few of our information sources or repositories are now linked (e.g., one view of customer data with some linked back office data)

Most of our sources are now linked, including linked customer and back office data

Fully linked information sources or repositories
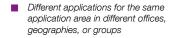
Linkage of electronic information sources

Figure 2: **Comparison for respondents within each analytics maturity level, of the linkage of electronic information sources.**

Related to the concept of fully linked data sources, the management of core enterprise support applications (such as ERP or CRM) is critical. Respondents with the highest analytics maturity tended to have one single instance of an application per application area, used by all locations (see Figure 3).

At the other end of the scale, respondents might have one defined application per area, but different configuration and outputs in various locations; or even different applications for the same application area, depending on the office or geography.

Different applications for the same application area in different offices, geographies, or groups

One defined application per area, but its configuration and outputs differ by location

One defined application per area, and configuration and outputs are common across locations

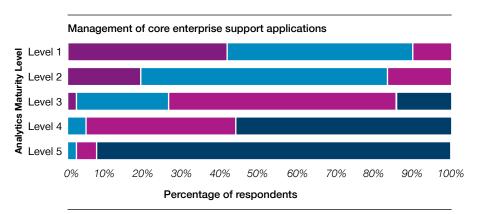*One single instance of an application per area which is used by all locations*

Management of core enterprise support applications

Figure 3: **Comparison for respondents within each analytics maturity level, of the management of core enterprise support applications (such as ERP, CRM, or HR planning).**
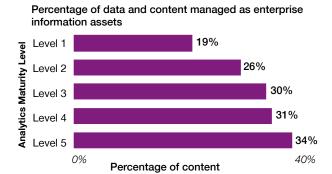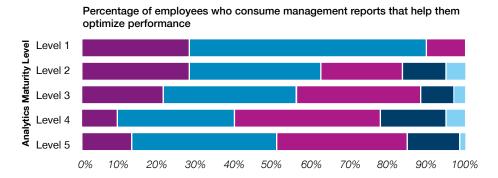
Percentage of data and content managed as enterprise information assets

Figure 4: : Comparison for respondents within each analytics maturity level, of the mean percentage of data and content managed as enterprise information assets (formally managed where defined data administration procedures exist for the entire enterprise, not solely in a division or unit).

- ■ *0-20% of employees*
- ■ *20-40% of employees*
- ■ *40-60% of employees*
- ■ *60-80% of employees*
- ■ *80-100% of employees*

Respondents with the highest analytics maturity reported that more of their data and content was managed as an enterprise asset, with data administration procedures at the enterprise level rather than only within individual divisions or business units. At the highest analytics maturity level, the mean was 34 percent of data managed as an enterprise asset, compared to 19 percent at the lowest level (see Figure 4). Respondents were instructed to think about data size (in GB) to estimate this figure.

Better analytics maturity generally enables an organization to make management reports or dashboards available to more employees within the organization (see Figure 5).

Not surprisingly, we found a linkage between an organization's revenue and its empowerment of employees with information that helps them make better decisions to optimize performance.

Percentage of employees who consume management reports that help them optimize performance

Figure 5: **Comparison for respondents within each analytics maturity level, of the percentage of employees who are consumers of management reports/ dashboards that help them optimize performance and influence revenue and/or cost.**

Having a higher proportion of employees who are consumers of management reports that help them optimize performance was associated in our study with higher revenue per FTE (see Figure 6).
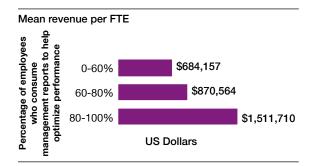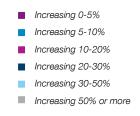
Mean revenue per FTE

Figure 6: Comparison of mean revenue per FTE for respondents, based on the percentage of employees who are consumers of information that helps them optimize performance (based on revenue and FTEs allocated to the responding business entity, which may be a division or business unit of the overall organization).
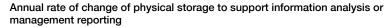
- *Increasing 0-5%*
- *Increasing 5-10%*
- *Increasing 10-20%*
- *Increasing 20-30%*
- *Increasing 30-50%*
- *Increasing 50% or more*

Superior information management practices come at a price; this involves capital investment and may include options such as cloud

Superior information management practices are associated with rapidly increasing demands for physical storage (see Figure 7).

To cope with this, the organizations in our study were investing more in capital assets, with a mean of 28 percent of total IT spend in capitalized assets for the group with highest analytics maturity, compared to means of 21-23 percent in the lowest levels.
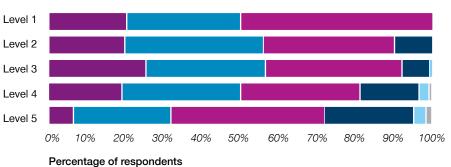
Annual rate of change of physical storage to support information analysis or management reporting

Figure 7: Comparison for respondents within each analytics maturity level, of the annual rate of change of physical storage to support information analysis or management reporting.

Percentage of total IT costs expected to be related to legacy environment, three years from now

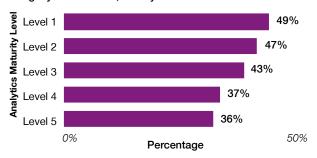| Analytics Maturity Level	
Level 1	49%
Level 2	47%
Level 3	43%
Level 4	37%
Level 5	36%

0% — Percentage — *50%*

Figure 8: Comparison for respondents within each analytics maturity level, of percentage of total IT costs expected to be related to current (legacy) environment, three years from now (legacy was defined as all infrastructure, business applications and data actively supporting enterprise operations today).

Relative priority of cloud services as a method for reducing legacy environment costs

Analytics Maturity Level	
Level 1	14.2
Level 2	17.5
Level 3	19.4
Level 4	20.5
Level 5	20.8

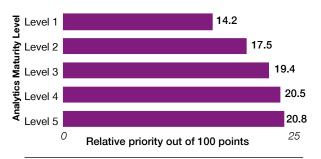*0* — Relative priority out of 100 points — *25*

Figure 9: Comparison for respondents within each analytics maturity level, of relative priority of using cloud services, as a method for reducing legacy environment costs in the next 3-5 years (out of total of 100 points).

Looking forward three years from now, they expect a smaller proportion of their total IT costs to be associated with their legacy (current) environment (see Figure 8).

These organizations are also more likely to expect that they will use cloud as a method to reduce legacy environment costs (see Figure 9).

We asked respondents about a number of methods to reduce legacy costs, including outsourcing, radical or gradual renewal of environments, SOA, and application rationalization. In addition to the finding that respondents at the higher levels of analytics maturity were more likely to expect to use cloud to reduce legacy costs, we also found that respondents at the lower levels were more focused on application portfolio rationalization.

This benchmarking study demonstrates that IT organizations seeking to improve their analytics capabilities will benefit from fundamentals such as a well-designed information architecture, linked data sources, management of information at the enterprise level, and more centralized administration of core enterprise support applications. These enabling practices and capabilities tend to involve rapidly increasing infrastructure demands, for which cloud is a potential solution.

The 2011 CIO Study provided these recommendations for IT organizations that are focused on managing and leveraging Big Data:

- *Harness more real-time data:* Generate insights through feedback collection, sentiment analysis and connection to social networks.
- *Design dashboards that use real-time data collection:* Offer dynamic dashboards using real-time data and use predictive analytics to provide situational metrics.
- *Analyze:* Dive deep into advanced analytics to develop insights into customer behavior, value chain relationships and competitive intelligence.
- *Act on deep customer understanding:* Elevate the customer experience to entirely new levels by using social network analysis.
- *Develop a culture of analytics:* Build predictive intelligence capabilities that can fundamentally change the business.

These types of changes are also likely to lead to new opportunities for innovation and growth.

To learn more about the IBM Institute for Business Value Benchmarking Program, visit **ibm.com/**iibv.

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About the author

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Notes and sources

1 "Capitalizing on Complexity: Insights from the Chief Executive Officer Study." IBM Institute for Business Value. May 2010. www. ibm.com/ceostudy2010.

2 "From Stretched to Strengthened: Insights from the Chief Marketing Officer Study. IBM Institute for Business Value. October 2011. www.ibm.com/cmostudy

3 "The Essential CIO: Insights from the Chief Information Officer Study. IBM Institute for Business Value. May 2011. www.ibm.com/ciostudy