Data Investments as a Competitive Advantage

CEB IT Leadership Council
For Midsized Companies

Executive Summary

Digitization has led to the highest amount of data generation in history. It has also led to the greatest opportunity for organizations to identify new opportunities and realize competitive advantage from that data.

Informatica understands how much value data can bring to the success of business initiatives and strategies. It also knows how hard it can be for IT to identify data quality issues and convince business leaders that this is a business problem. Business leaders argue that they cannot justify a major investment in data improvements that doesn't connect to enterprise strategy.

Informatica

2016 Revenue:	More than US $1 Billion
Employees:	More than 3,500
Headquarters:	Redwood City, CA

Based in Redwood City, California, Informatica is a software development company founded in 1993. Their product portfolio boasts tools that assist in data integration, information lifecycle management, master data management, and cloud.

Learn more about the CIO and IT

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As the leader in enterprise cloud data management, Informatica has worked with hundreds of organizations to implement their data strategies using the three aspects of a successful data strategy:

- Tie data improvements to business strategy.
- Concentrate on the investments with the largest impact on the most important data.
- Initiate a collaborative effort with joint accountability for improvements to analytical capabilities.

As a result of this approach, business leadership partners with IT on targeted, continuous improvements to data that have the biggest impact on the organization's most important decisions and business outcomes.

Graeme Thompson, CIO of Informatica, is familiar with both the company's internal approach and the approach of the organization's professional services team. As a result, Graeme is able to provide an in-depth look at these three aspects of an effective data strategy.

Challenge

As organizations undergo digital transformation, creative uses of information and technology can lead to competitive advantage in the industry. Unfortunately, the sheer amount of data being stored across a multitude of solutions has created significant hurdles that prevent an organization from getting value from its information.

This challenge in unleashing the business value of data comes from several sources in this environment:

- Data dispersion across many applications (in the cloud and on-premise), business silos, and data sources
- Questionable data due to immature data management capabilities
- Unclear roles and responsibilities for improving the organization's analytical maturity in managing data and performing analysis

IT leaders want to improve the organization's data management, but they struggle to get buy-in from the business on data initiatives. Most organizations calculate and present the ROI of data governance initiatives without business context, leaving business leaders to perceive data management mistakenly as an IT problem.

To make matters worse, these business cases often recommend a comprehensive data governance strategy that is not well-suited for today's rapidly changing environment. IT is therefore conflicted between the organization's need for better data and IT's inability to convince an unwilling business participant to take the lead.

No one disagrees that the business is ultimately the owner of the data. But IT needs a different approach if it is going to partner effectively with the business on an enterprise data strategy

> "IT should be enabling business functions to improve their decision making over time, at the pace and investment level that they can absorb. We don't want to push them too fast or be in their way."
>
> Graeme Thompson, CIO
> Informatica

The Idea

Informatica—an organization that supports thousands of companies with its data management initiatives—quickly noticed how this changing environment was affecting its customers' ability to adopt and use its tools. At first, the company saw this manifest as its customers struggling to get the budget and commitment required to make their data strategy a success. Graeme also began to see internal IT changes in what makes a data management initiative effective as a part of digital transformation.

Organizations who were unsuccessful in their data management initiatives had similar approaches. They:

- Led with a data problem in their business case,
- Recommended a comprehensive data governance initiative, and
- Assigned separate yet corresponding and distinct roles to IT and the business.

When analyzing organizations that had overcome these challenges (including its own), Informatica found that successful organizations adjust their approach in three ways (figure 1):

1. **Justify Investments in Better Decisions, Not Data—**Help the business trace the organization's strategy to where it needs to improve data that informs its critical decisions.
2. **Propose a Targeted, Attainable Data Strategy—**Propose targeted investments that focus on continuous improvements to data access, data quality, and analytical capability.
3. **Establish Joint Accountability—**Establish co-ownership that encourages partnership and collaboration on data governance, analysis, and reporting improvements.

When making the business case, Informatica found that working back from the data problem to the revenue impact disconnected the investment from strategic objectives. Instead, it traced the business strategy to underlying business decisions to show the immediate impact of data health on the its ability to execute effectively. As a result, the business immediately understood the importance and urgency of the investment.

When proposing a data strategy to address underlying issues, organizations were most effective at presenting the value of targeted improvements that directly impacted the most critical data. This approach is in line with the rapidly changing, continuously experimenting nature of analytics initiatives.

Finally, the most successful improvements made to data management were a joint project between the business and IT.

Improvements to the quality of analysis were most effective when done collaboratively and iteratively. So the team needs to have proper incentives to ensure that the group works together toward the same ultimate goal.

By seeing data issues as road blocks to realizing their strategy, senior leaders realized the competitive advantage of investing in a data management initiative and working together on the data strategy.

Figure 1: Data Strategy

Source: CEB analysis.

1. Business Leadership, Not Business Buy-in

The biggest mistake that IT leaders make is trying to get business buy-in for a data governance initiative when they need business leadership for a data strategy.

Informatica's most successful customers take the business on a journey from the strategy to the necessary data improvements to make more effective decisions. The most business-centric approach to communicating this to the business is to create a goals cascade, tracing the organization's main objectives to the critical decisions made at two levels:

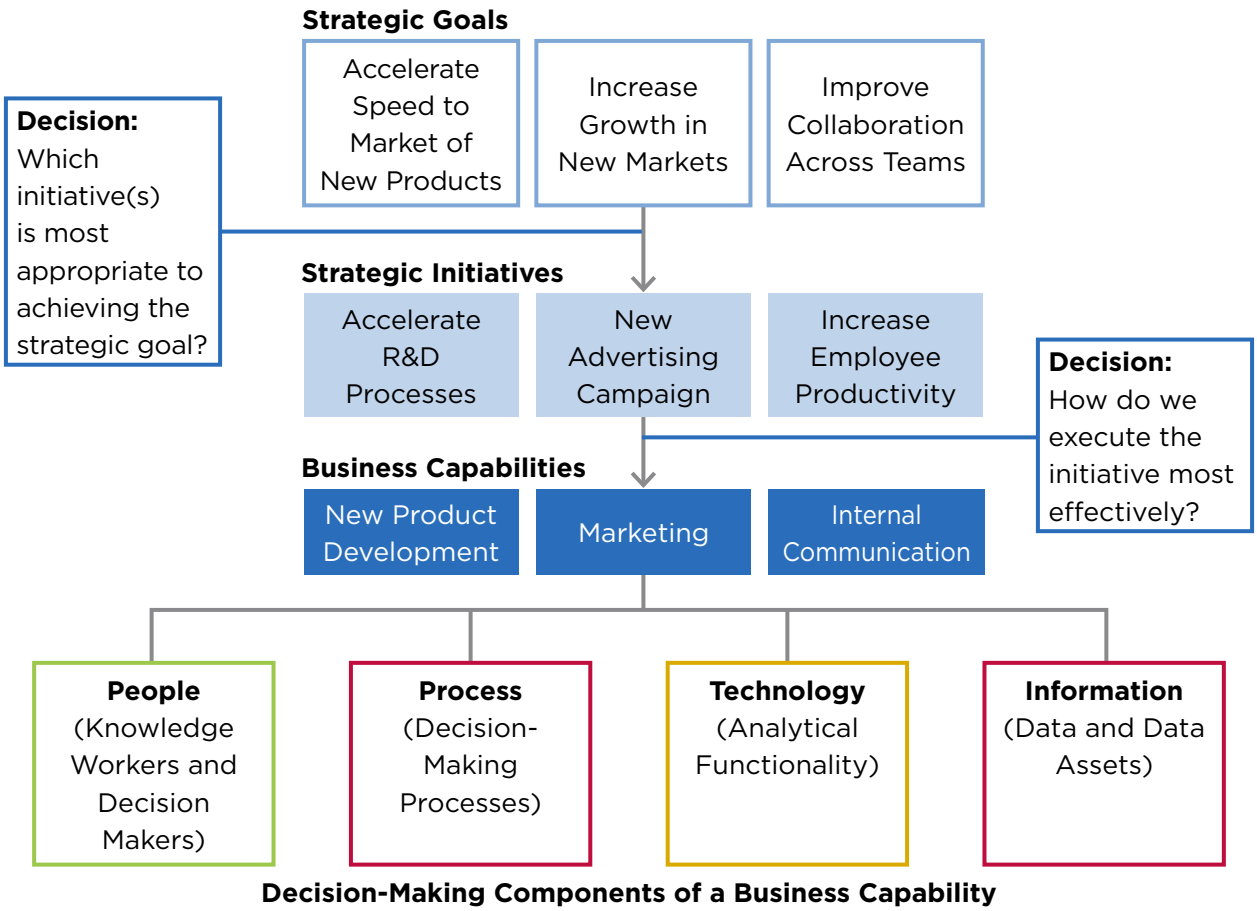
- The data supporting the decision to undertake an initiative
- The data within the business capabilities that enable the organization to make the best decisions regarding how to execute on those initiatives

Business Capabilities Defined

A structured way of expressing the activities the enterprise performs to achieve its desired business outcomes; those activities consist of people, process, technology, and data.

A business capability-centered approach ensures business leaders can immediately recognize the need to improve their data, analysis, and decision making as a mission-critical problem to achieving their strategic goals (figure 2).

Figure 2: From Strategic Goals to Decisions and Data Through Business Capabilities



Source: CEB analysis.

By tracing strategy to the most important data assets, IT can evaluate the current quality of those specific assets and the opportunity for improvement based on the level of investment. Business leaders will then have the ability not only to provide buy-in but also to propose the data management initiative themselves.

Case in Point

Fannie Mae provides large-scale access to housing finance in America based on collecting and reporting data for financials and improved risk management. Their data was scattered, coming from more than 100 sources in different forms and types. However, after the 2008 global financial crises, new regulatory requirements were put into place, which if not adhered to incurred large penalties. Additionally, Fannie Mae had to start providing quarterly reports to the Federal Reserve and Wall Street regarding business risk.

Rather than start from the need for consolidated data, Fannie Mae worked back from these major business changes to identify the improvements to their ability to assess credit-worthiness or loans and assess risk levels of investments. They were then able to collect and present information about how their business data enters, flows, and is changed by multiple internal processing and reporting applications so that they could justify improvements to the underlying tools and data.

2. Focusing Initial Efforts

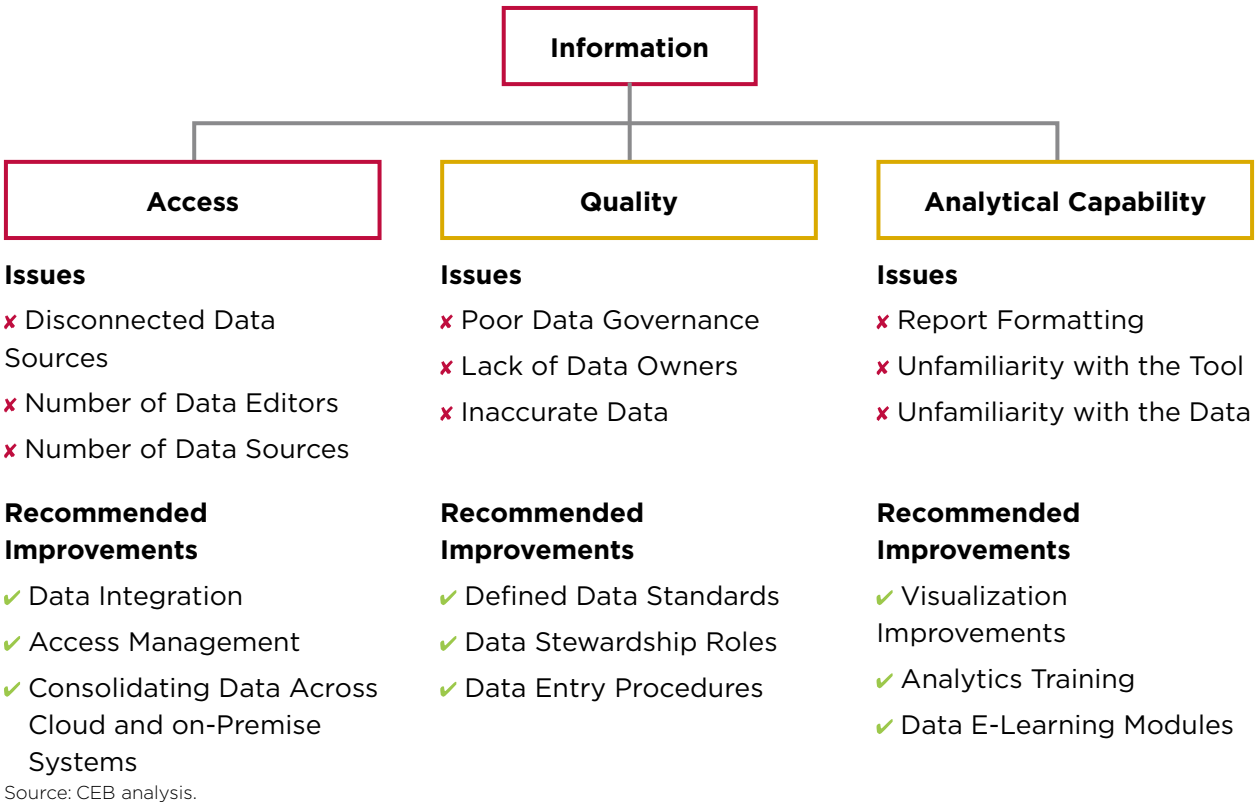
With a business-led investment in data improvements, IT and the business can work together on identifying the most impactful improvements to the data.

Informatica noticed that the analytical capabilities that can be improved can be categorized in three ways (figure 3):

1. **Data Access** (e.g., data integration, access management, availability across Cloud, on-premise, in hybrid ecosystems)
2. **Data Quality** (e.g., governance, data lifecycle management, stewardship, administration, standards)
3. **Analytical Capability** (e.g., reporting, knowledge worker analytical expertise, analytical tools)

Successful IT organizations provide a complete view of the potential improvements and suggest targeted investments that prioritize the data management improvements that will have the most impact on the decisions supporting the strategy.

Figure 3: Identifying Data Improvements for the Data Strategy



Source: CEB analysis.

Organizations found that in the initial efforts, access issues had a higher priority than quality, which had a higher priority than analytical capability. As access and quality reached adequate levels, the prioritization needed to shift to analytical capability to continue seeing significant returns on investment.

The complete view necessary to identify the initial effort should include:

- Critical data health issues and root causes,
- A list of data management improvements, and
- The value, risk, cost, time, and effort of those initial investments.

With this information, IT can gradually increase its maturity, starting small with the most attainable, highest-value improvements. Once those specific improvements are identified, it can begin partnering with the business on executing the data strategy.

Case in Point

In 2013, Western Union processed more than 29 transactions per second, with 459 million business payments alone. This led to a mass generation of structured and unstructured data that had to be integrated. To expand to new markets with its digital products and give customers a more personal experience, the organization had to deal with the data complexity and simultaneously scale access, storage, and processing.

Through its analysis, Western Union identified that the most important improvement to its goal of improving the customer experience was to enable predictive analytics that identify trends in sending and receiving behaviors. This investment allowed the company to provide a more personalized experience for customers using its mobile channels and digital products.

3. Collaborating on Improvements

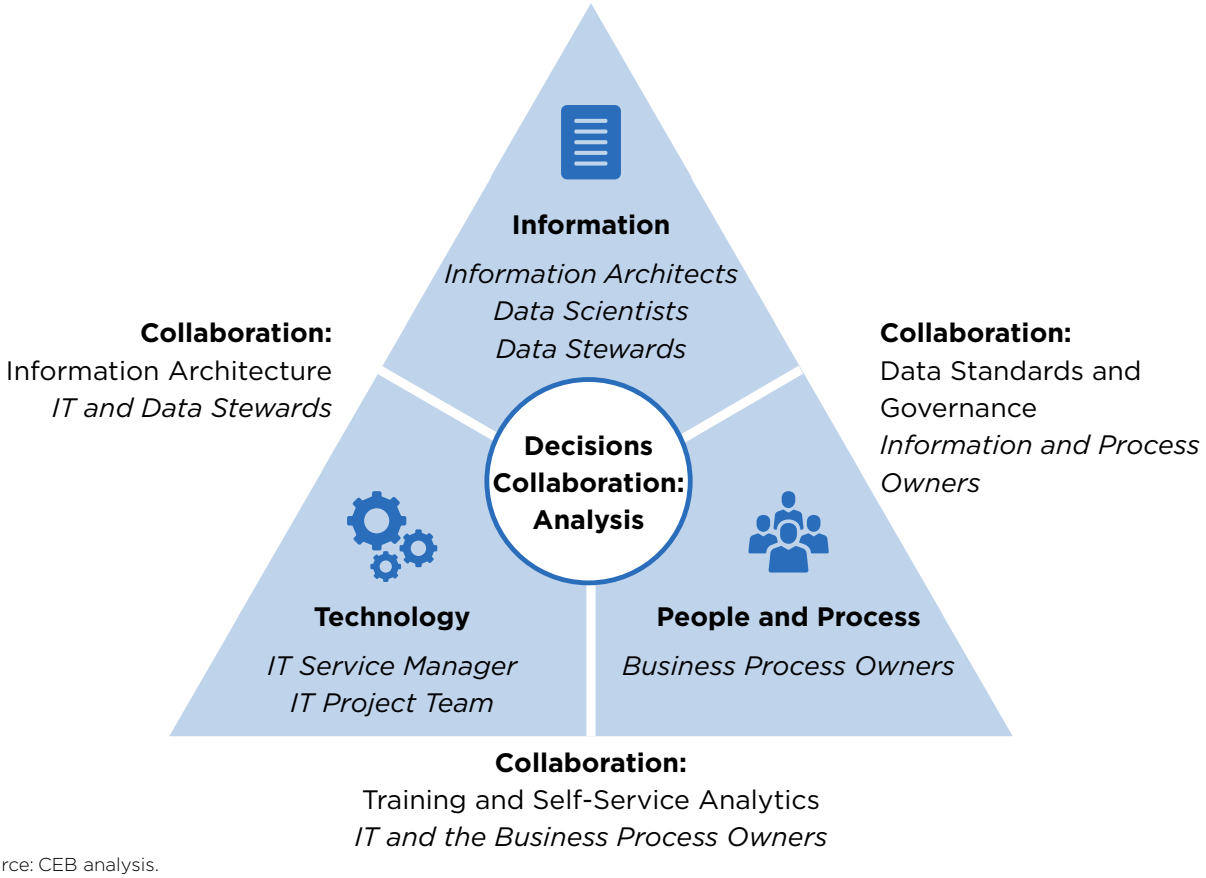
At the beginning of any data management initiative, IT and the business must establish joint accountability for improvements to decision-making ability while delineating roles for owners of the people, process, technology, and information.

Although IT owns the technology and the business owns the people and process, the overall outcome and the information component are a shared responsibility that require constant collaboration between IT, business leaders, and any central business intelligence or analytics services that may exist (figure 4).

Examples of collaborative improvements include:

- **Data Access—**IT and the business jointly own the identification of data flows, data integration needs, and knowledge worker access requirements. IT understands the systems involved and the systems integration required, while the business understands the process, how data is managed across the process, and who needs access to what information.
- **Data Quality—**IT and the business share stewardship roles, standards setting, and governance model accountability. IT owns the technical standards, changes, and data quality measures, while the business owns the data governance and stewardship initiative to improve data quality through improved management.
- **Analytical Capability—**IT and the business share accountability for the utilization of reports, the ability of knowledge workers to perform analysis, and the value of analytical tools. IT makes sure data is updated, secure, and accurate and provides role- and decision-oriented training and functionality for self-service analytics. The business owns training attendance, tool utilization, report consumption, and use in management activities and decisions.

Figure 4: Encouraging Collaboration through Joint Accountability



Source: CEB analysis.

Data initiatives involve experimentation, collaboration, and iteration. This joint ownership approach balances individual and joint accountability, which will enable the team to make rapid changes to the decisions, analyses, and reporting as individual roles focus on improving the people, process, information, and technology underlying those decisions.

Case in Point

UPMC—a world-class health care delivery provider with more than 20 hospitals and 400 locations—wanted to fully understand its patient outcomes and costs across all locations. It decided to invest in advanced analytic and predictive modeling to drive business strategies.

To get the full picture, UPMC had to first bring together data from hundreds of sources, including UPMC's facilities, pharmacies, and labs, as well as data from over 1,200 applications. In addition to these integration goals, 200 people from across the organization collaborated to manage data governance efforts. Finally, IT worked with the business to fully understand analytic needs and interest to then create self-service tools. Since implementation, these self-service tools have already enabled researchers at UPMC to gain insight about molecular differences in breast cancer.

Results

By enabling a business capabilities–focused data strategy, Informatica's most successful clients secure focused, business-led data investments and ensure continuous improvement through joint efforts with business partners and ultimately tight alignment to enterprise strategy.

This rapid, continuous improvement in data quality and analysis helps organizations that implement this approach see accelerated returns from their investments and continuous commitment from business partners. Using this approach, organizations are able to prioritize the most critical data that enables the most important decisions and business outcomes.

As a result, the business sees faster, earlier gains not just in data quality but also in decision-making ability, which is what any data investment is striving to achieve. Better decision making is the real competitive advantage from data-driven digital transformation, not more and better data.

Case in Point

GE Aviation decided to transform its business model to sell subscriptions to engines for monthly or annual usage, which can be replaced, rather than selling jet engines at a single price. Essential to making this business model work is knowing exactly when any engine at any given time will fail. If an engine is replaced too early, then GE risks leaving money on the table. If an engine is replaced too late, a disastrous situation can ensue.

This business model relies on critical engine monitoring capabilities that inform GE Aviation exactly when a failure is likely to occur, ensuring both efficiency and great performance that is necessary for strong revenue and long-term growth. GE began collecting data by placing sensors on its engines, but the engines generated about 2 TB of data per two-hour trip.

With so much data flooding into the systems, IT was integral for GE to improve the analytical capabilities supporting this monitoring process. This task involved aligning real-time streaming data generated from engines to aircraft tail number and engine position as well as building out a platform that applied machine analytics to the enterprise data.

Making these targeted improvements required changes in how the business operated and how IT analyzed data. IT and the business worked collaboratively on the data reporting, analysis, and automated alerts. And IT handled meeting the back-end network, storage, capacity, and software needs to provide the solution that could support this modernized process.

This approach allowed the organization to predict the performance of future machines, helped it prevent unplanned outages and machine failures, and supported its efforts to optimize maintenance schedules. GE's business-led effort to improve data management needs, its focus on targeted analytical improvements, and its continuous IT-business collaboration all contributed to a successful transition to this completely different business model.

About the CIO and IT at Informatica

Graeme Thompson is senior vice president and chief information officer (CIO) of Informatica with responsibility for the strategic direction of Informatica's global business solutions and technology infrastructure. Graeme's focus is on fostering a world-class IT organization and furthering Informatica's use of cloud, big data and other technologies to create competitive advantage, enable new revenues and aid in driving customer success.

Graeme brings more than two decades of technology and business leadership experience in IT and supply chain positions. Most recently, Graeme was a vice president at Oracle, where he led a team of hundreds of employees in dozens of countries with end-to-end responsibility for all user-facing enterprise IT services that were utilized internally at Oracle. Prior to Oracle, Graeme was vice president and chief information officer at BAE Systems. Before that, he was vice president, Supply Chain at Riverstone Networks.

Graeme graduated with Distinction from the University of Paisley in Scotland with a Bachelor of Arts in Business Economics with Marketing.

About the Digital Disruptor Series

As organizations change more rapidly and technology becomes more critical to business success than ever, the way IT supports the business is evolving. In this series, we have captured interesting practices and ideas from organizations that are disrupting IT's traditional operating model in order to capitalize on digital opportunities for their organizations, customers, and vendors.

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