

Stretch Your Data Management Capabilities

Continuous Improvement: The Data Management Playbook

by Brian Hopkins
January 10, 2018

Why Read This Report

Firms face an enormous data management challenge: how to act on data and insights to serve increasingly powerful customers and outmaneuver disruptive competitors. Architects once had time to plan methodically, but those days are quickly fading as the pace of business change accelerates. The only answer is continuous improvement that stretches data capabilities in an “insights-first” strategy. This report provides advice for enterprise and data architects to help them systematically improve their data management capabilities in order to turn data into insights.

This is an update of a previously published report; Forrester reviews and revises it periodically for continued relevance and accuracy. We have updated it to reflect our current focus on insights to action.

Key Takeaways

The Age Of The Customer Demands Better Data Management

You need more insight from more data to understand and serve increasingly powerful customers. However, enterprise architects face complex data management problems that existing methods can't solve. Embrace an agenda based on understanding the insights needed to meet business objectives. This strategy stretches capabilities without breaking critical systems and quality, security, or compliance safeguards.

Set Your Strategy To Stretch Your Firm's Data Culture, Competency, And Capability

Data management improvement requires that actions overcome cultural barriers, like executives' tendencies to hoard data or avoid counterintuitive decisions based on data. Firms must build governance and analytic competencies that complement next-generation technical capabilities.

Use Forrester's Data Management Capability Model To Anchor Tactical Execution

With complex issues rooted in legacy tech that no longer meets your needs, or culture and competency issues that are out of your control, you need a comprehensive framework to anchor tactical plans. Use Forrester's data management business capability framework to reposition your strategy to address today's insight needs and tomorrow's intelligent insights ecosystem.

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Stretch The Three C's — Culture, Competency, And Capability

As data gets increasingly big, efforts to improve your data management foundation must consider big data's three C's: culture, competency, and capability. Rather than trying to achieve improvements in each C through big changes, enterprise architects must adopt a strategy of slow stretching:¹

- › **Stretch culture by solving data-sharing issues.** The biggest data problem many firms face is how to share data across organizational boundaries.² For example, one CIO we worked with understood the value of cross-organizational data sharing with its largest clients. The problem was getting the executives, who were threatened by potential revenue loss, to agree to share data between different P&L lines of accountability. Enterprise architects likely cannot solve these issues, but they can demonstrate how to share data in a pool and track its usage with big data auditing and monitoring technology. This could lead to options for potential benefit splitting as a solution to executive incentive misalignments.
- › **Stretch competency by giving your business access to more raw data.** At a data management workshop Forrester facilitated between business and technology organization executives, one marketing lead leaned over the table and said, “Just give us the data!” She was expressing frustration that the architects in the room were trying to figure out how to support marketing's need by asking all kinds of questions about data quality. Her point was that if she could get to the data, her people could answer quality questions and work with their technology counterparts to solve issues. Sometimes, the best path to improving your business's competency is to give it the raw, messy stuff and let it figure out if it needs your help.
- › **Stretch technical capability by improving elasticity and flexibility.** According to our data, 57% of global data and analytics decision makers said they are working to combine content and data management programs into a unified information management program, and 58% are working on expanding their ability to source external data.³ However, many of the challenges business execs face are complex security, privacy, and legal issues that enterprise and data architects cannot solve. What you can do is measure and improve elasticity and flexibility as your business navigates these issues (see Figure 1). Be ready to say, “Yes, we can: Here are your options and the tradeoffs associated with each.”

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FIGURE 1 Quantify Bidirectional Scalability According To The Type Of System You Want To Improve

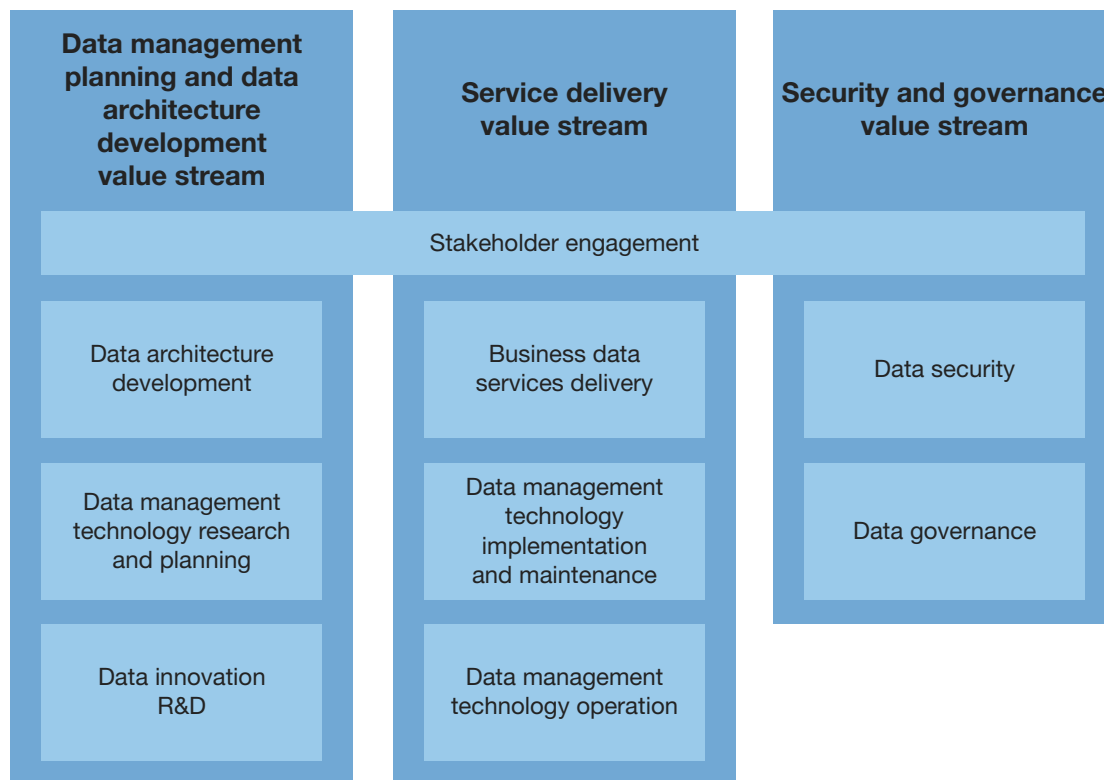
	Enterprise warehouse	Operational data store (ODS)	Data staging area/data pool	File system
Add volume capacity	<ul style="list-style-type: none"> • Cost to scale per terabyte per tier • Time required to upgrade capacity • Projected time to reach current capacity limit 	<ul style="list-style-type: none"> • Cost to add capacity to network storage • Projected time to reach current capacity limit 	<ul style="list-style-type: none"> • Cost to increase storage capacity per tier • Projected time to reach current capacity limit 	<ul style="list-style-type: none"> • Cost per tier to add file storage capacity • Projected time to reach current capacity limit
Change the rate of data capture	<ul style="list-style-type: none"> • Current daily or hourly data growth rate • Estimated cost to increase by factors: +25%, +50%, and +100% 	<ul style="list-style-type: none"> • Current hourly or per-minute data growth rate • Estimated cost to increase by factors: +50%, +100%, and +150% 	<ul style="list-style-type: none"> • Current daily or hourly data growth rate • Estimated cost to increase by factors: +100%, +150%, and +200% 	<ul style="list-style-type: none"> • Current daily or hourly data growth rate • Estimated cost to increase by factors: +25%, +50%, and +100%
Add new data feed	<ul style="list-style-type: none"> • Cost to add new data source 	<ul style="list-style-type: none"> • Cost to add new data source 	<ul style="list-style-type: none"> • Cost to add new data source 	<ul style="list-style-type: none"> • Cost to integrate various types of file-capture systems/ applications
Purge data and reduce infrastructure footprint	<ul style="list-style-type: none"> • Can we scale down the system by offloading cold data? • Costs to conduct scale-down operations • Maximum data-purge rate 	<ul style="list-style-type: none"> • Can we scale down the system by offloading cold data? • Costs to conduct scale-down operations • Maximum data-purge rate 	<ul style="list-style-type: none"> • Can we scale down the system by offloading cold data? • Costs to conduct scale-down operations • Maximum data-purge rate 	<ul style="list-style-type: none"> • Can we deduplicate and purge the system? • Costs to do so • Maximum data-purge rate

Frame Improvements With The Data Management Capability Model

How do you create an environment that fosters continuous improvement? Use Forrester's data management business capability model as an anchor — it is not beholden to technology or business processes but rather treats data management as a set of capabilities that includes people, process, and technology components (see Figure 2).

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FIGURE 2 Anchor Your Execution Plan In Forrester's Data Management Business Capability Model**Mature Your Data Management Foundation In Four Areas**

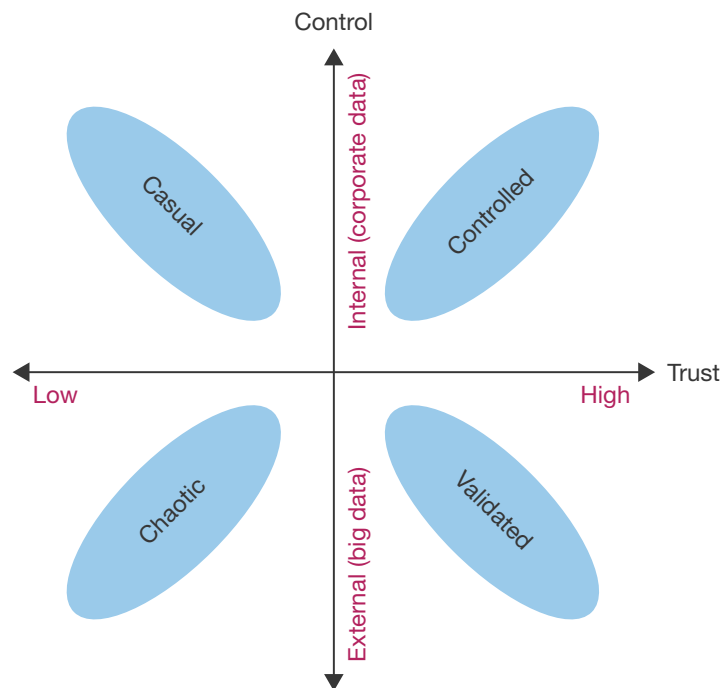
Ensure your program of continuous data management improvement includes plans to improve engagement, governance, architecture, and service delivery:

- › **Improve stakeholder engagement by attracting customer-oriented business partners.** It is likely that past data management efforts have built relationships with financial, operations, security, and compliance stakeholders. The age of the customer means you need to attract marketing, strategy, and product development executives. Do this with clear examples that connect the dots between data management improvements and revenue and customer experience outcomes.
- › **Improve governance by focusing on trust, control, and quality.** Stretch your capabilities by improving your firm's ability to flexibly secure newer, more diverse, and messier types of data.⁴ Use Forrester's data governance policy framework to classify data according to a continuum of trust and control, and start evolving policies around each quadrant of the 2x2 matrix (see Figure 3).⁵

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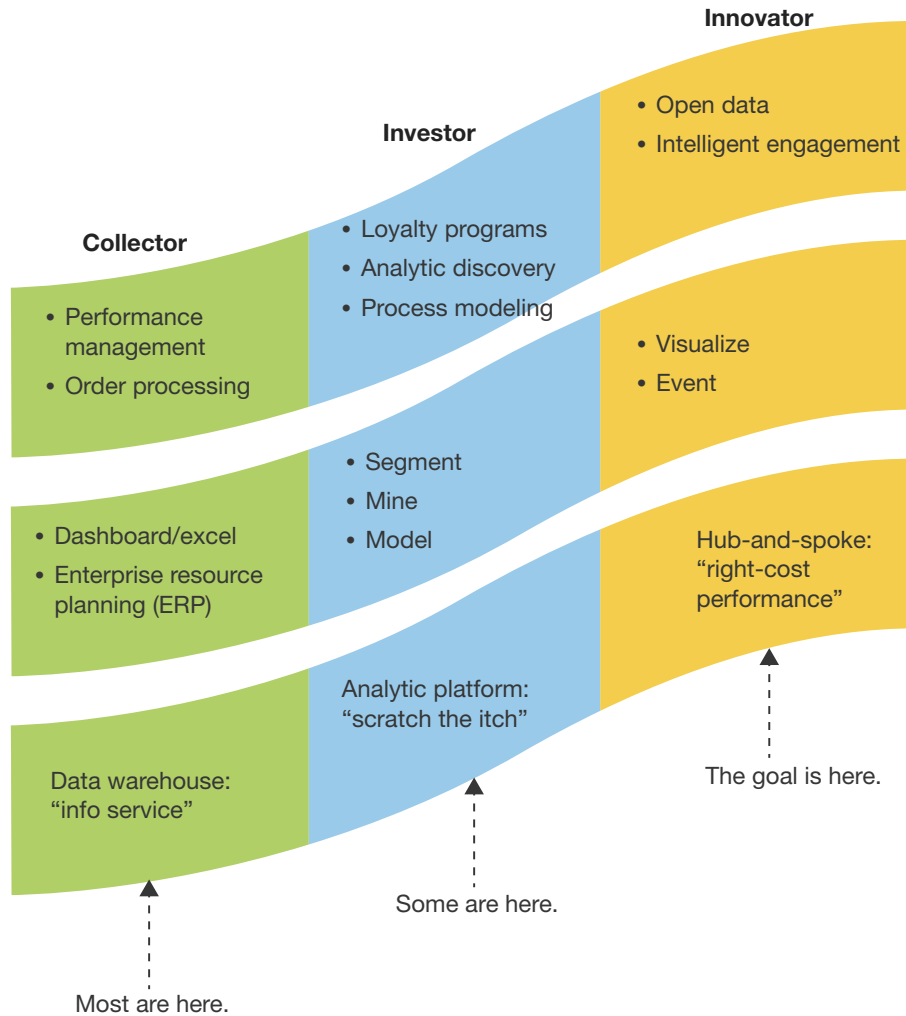
- › **Improve your planning architecture to make your firm a data innovator.** Data collectors take an inside-out view — they carefully collect, curate, and protect scarce data assets (see Figure 4).⁶ This approach may have worked as you built systems of record, but it will not do in the age of the customer, where customer engagement requires data innovation.⁷ Instead, create a future state that puts decision makers and customers at the center of your strategy, rather than sources or data types.
- › **Improve service delivery by recasting the software delivery triangle for data.** A VP of customer analytics told us: “We stopped asking IT because every request gets met with the same huge cost and long time frame. It’s like they only know how to solve a problem one way.” Leaders are “hyperflexible” — they optimize service delivery tradeoffs between data quality and security, speed of delivery, and the ability to absorb constantly changing requirements in a new spin on the classic “software triangle” (see Figure 5).

FIGURE 3 Use Control And Trust As A Base For Flexible Data Governance And Security Policies

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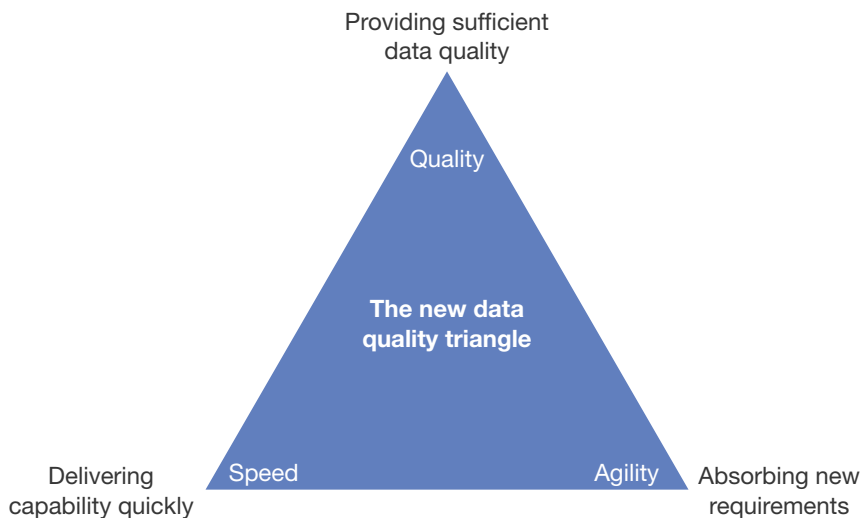
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FIGURE 4 Plan A Future State That Enables Data Innovation And Participation In The Data Economy



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FIGURE 5 The New Data Quality Triangle**Recommendations****Return To The Three C's To Evaluate Your Progress**

Continuous improvement takes disciplined measurement over time, but what should enterprise architects measure and what does success look like? Start observing your organization now and recording data. Twice a year, compare yesterday and today. Look for these signs of success:

- › **Data sharing and improved risk-taking are evidence of cultural improvement.** One of the biggest cultural stumbling blocks that Forrester hears over and over is the presence of management barriers to data sharing. A close second is the inability to trust what the data is saying when it goes against management's instinct. Start by inventorying these issues at your firm, then periodically check to see if your improvement program is addressing them. If not, adjust your program to work more on soft changes through relationship building and proof points.
- › **New governance and advanced analytics competencies are tackling complex problems.** Two major competency challenges that most firms face are the inability to make business data governance decisions that stick and developing the processes that break up complex analytics problems so that small, skilled teams and service partners can all contribute to the solutions. You must start documenting data governance decisions and tracking the outcomes over time.

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- › **Future-state architectures are enabling more insight from more data.** By now, savvy enterprise architects understand the flexible, cost-effective technical architecture their firms need to succeed in the age of the customer. Progress can be a different matter. Create biannual milestones in your road map and do a root-cause analysis when your firm misses these milestones. Work up a plan to address progress issues and then check off action items.

What It Means

Data Management Improvement Supports More Innovation

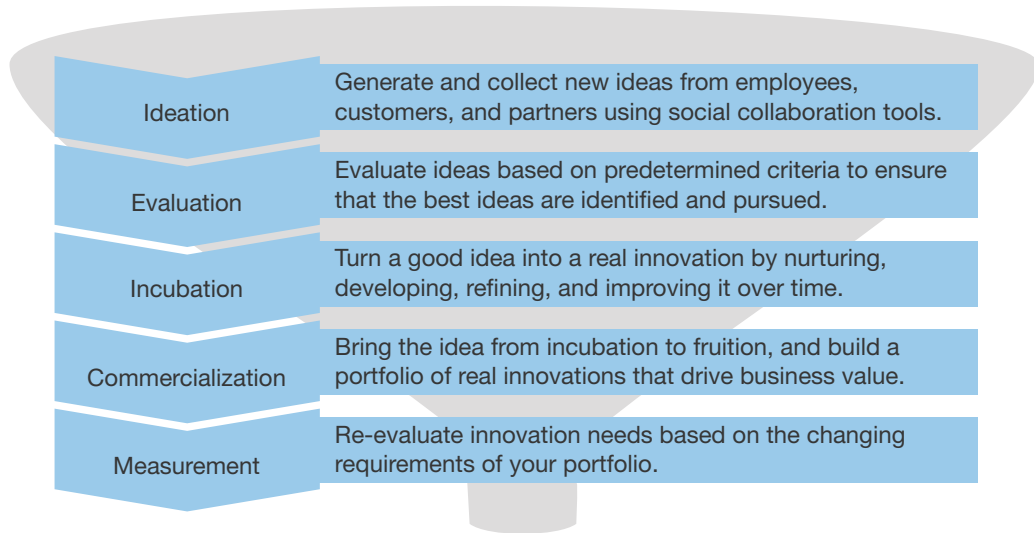
Your data management capabilities must be able to keep up with your business's plans to provide innovative products and differentiating experiences that drive customer engagement and market disruption. Enterprise architects must work overtime to improve their firm's ability to capture, manage, and govern data and make it available for insight discovery.⁸ Doing this consistently shores up the foundation upon which you can build innovative capabilities (see Figure 6). For example:

- › **A retailer builds customer engagement analytics on a data management foundation.** The Al Safeer Group of Companies, a retail conglomerate in the United Arab Emirates, started working on data management fundamentals like quality and governance in 2011. It took three years of hard work, but this allowed the company to create sophisticated video analytics of customer foot traffic. As a result, it was able to optimize store clerk placement and merchandising.
- › **A telecom spinoff is hoping to help governments set economic policy.** DataSpark, a spin-off of Singtel, Singapore's largest mobile operator, is looking to identify which villages in Indonesia are likely to grow in wealth by analyzing the movement and communications of its people. If successful, it could help governments set economic policy. Having such aspirations is only possible because DataSpark is currently building and perfecting a data platform that is able to collect data, manage it, and ensure the privacy of individuals.

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FIGURE 6 Improving Data Management Improves Innovation



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Supplemental Material

Survey Methodology

The Forrester Data Global Business Technographics® Data And Analytics Survey, 2017 was fielded between February and April 2017. This online survey included 3,378 respondents in Australia, Brazil, Canada, China, France, Germany, India, New Zealand, the UK, and the US from companies with 100 or more employees.

Forrester Data Business Technographics ensures that the final survey population contains only those with significant involvement in the planning, funding, and purchasing of business and technology products and services. Research Now fielded this survey on behalf of Forrester. Survey respondent incentives include points redeemable for gift certificates.

Please note that the brand questions included in this survey should not be used to measure market share. The purpose of Forrester Data Business Technographics brand questions is to show usage of a brand by a specific target audience at one point in time.

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Endnotes

- ¹ The C's of big data are an actionable alternative to viewing big data as data that, by some quantity of volume, velocity, or variety, is somehow too big for some specific past technology or practice. The key to the C's is that they are actionable, and the call to action is "close the gap" between data and action. See the Forrester report "[Reset On Big Data.](#)"
- ² Firms are beginning the long process of democratizing data: 55% of global data and analytics decision makers say that their firms have implemented or are implementing, expanding, or upgrading processes to create a business-led data stewardship program, while 21% say they are planning to do so within the next 12 months. Source: Forrester Data Global Business Technographics Data And Analytics Survey, 2017.
- ³ Source: Forrester Data Global Business Technographics Data And Analytics Survey, 2017.
- ⁴ When it comes to big data, an exclusive focus on Hadoop misses other ways of satisfying the demand of businesses to get more insight from more data more quickly. For more information on the variety of big data technologies, including security and governance, see the Forrester report "[TechRadar™: Big Data, Q1 2016.](#)"
- ⁵ Forrester clients describe their data governance work as long on effort but limited in success. Yet there is strong evidence that competence in data governance leads to both operational efficiency and tangible business outcomes. For more information on how data quality and data governance can impact business outcomes, see the Forrester report "[Data Governance Equals Business Opportunity. No, Really.](#)"
- ⁶ For more information on action items for enterprise architects around modernizing data management, see the Forrester report "[Data Technology Pathfinder.](#)"

For a conceptual view of the impact of the data economy on enterprise architecture and an outline of organizational capability areas that will need to rapidly mature in order for your firm to fully participate, see the Forrester report "[Five Things EAs Should Do To Prepare For The Data Economy.](#)"
- ⁷ Forrester defines systems of engagement and juxtaposes them with systems of record. Understand that as an architecture, systems of record, such as ERP, financial, and billing systems, have very different architectural qualities from systems of engagement that touch people and let your business keep up with them. See the Forrester report "[Mobile Is The New Face Of Engagement.](#)"
- ⁸ Data is top of mind at most firms, but most are missing the mark, and an alarming gap exists. To address this shortfall, data management strategies must start with a clear understanding of the insights needed to drive business action. See the Forrester report "[Brief: Why Data-Driven Aspirations Fail.](#)"

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