

Predictions 2014: All Things Data

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WHY READ THIS REPORT

The availability of data inside and outside the firewall and the plethora of creative opportunities to use it are changing how businesses operate. By the end of 2014, we can be sure that computing and processing will be even faster and cheaper than they are today. But what else will change this year? In this report, Forrester offers predictions for big data, cloud, the data economy, cognitive computing, data science, data governance, and enterprise information management.

DATA'S VALUE IS FINALLY RECOGNIZED

For several years, we have noted a shift in power from companies to customers. Customers call the shots; they can and do transfer their loyalty when they are not well catered to with engaging customer experiences. In 2014, the displacement of power from brands to customers will continue to heighten the increasing attention on data: its potential, its risk, and its value. But this year, the value of data will become clearer and directly tied to its ability to drive customer value. Here are Forrester's predictions for the impact of data on your enterprise in 2014:

1. **Big data matures into concrete projects — with mixed results.** 2013 was the year of “big data confusion,” with vendors putting a “big data” label on diverse products and services and technology management leaders struggling to understand the implications and best starting point for their companies. Today, only 20% of firms use big data technologies, typically to handle large volumes of data.¹ But in 2014, new patterns and use case scenarios (including operations, marketing, sales, and many more) will stabilize, opening the door for more concrete big data projects.² In fact, our recent Forrester survey shows that in 2014 more than one-third of all companies (36%!) are planning a big data project. However, we predict that many of these projects will likely fail in their first approach because of wrong technology selection, lack of skills, or overall reluctance on the part of business leaders to embrace more abundant, diverse data of varying quality in their decision-making processes.

What it means: Just calling your project “big data” won't do the trick. To succeed with big data, look beyond technology and embrace the organizational, cultural, and governance changes that come with no longer viewing data as a scarce resource. Business goals should drive big data goals. Applied appropriately, these tools and techniques can transform and improve any company's capabilities for better customer-oriented decisions.



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2. **[Big] data goes cloud.** As companies expand their adoption of public cloud services, technology management leaders will explore moving some of their data management and analytics capabilities into the hands of external cloud service providers. Analyzing data at a scale never before thought possible involves either cost-intensive data architectures (e.g., combinations of streaming, in-memory, or NoSQL technologies), scarce data science skills (e.g., for predictive modeling), or large volumes of open data (e.g., social feeds). These competencies are a big challenge for most companies. An external cloud service provider (either in a public or dedicated cloud environment) with the right offering and SLA can be an appealing option in such cases. In 2014, we will see new cloud-based data services from different vendors (traditional service and technology vendors as well as newcomers and an increasing number of companies that will mash up internal and external data for advanced analysis in the cloud).³

What it means: To speed up (and hopefully lower the cost of) data efforts, build a road map to close the capability gaps with external cloud solutions. What data or capabilities absolutely have to stay in-house; what could be moved to an external, but secure and dedicated, cloud environment; and what can be moved into a public cloud? For many (big and small) data initiatives, cloud services (e.g., MDM-as-a-service) can be just the right answer to overcome rigid, costly, in-house capabilities.

3. **Data brokers proliferate in a new data economy.** As firms recognize the value of the data they store, more and more companies will start to implement new business models to value and/or monetize their data assets in the market. Traditional data service providers like Dun & Bradstreet (D&B) and IMS Health will increase the value of their data assets with new analytic capabilities, and other companies like telcos and banks will offer parts of their internal data riches to the market. Meanwhile, newcomers will mash up various data sources for new insights about unexpected relationships.⁴ Buying, refining, and selling data as well as sharing data between business partners will fuel the growth of a new, quantifiable data economy.

What it means: To thrive in the new data economy, start with a few simple questions: What data is strictly confidential and needs to be protected? What data is best to be shared with business partners to improve operations? What data has significant value to other players in the market and could be optimized? Firms that aren't ready to share data may still participate in the data economy by following the lead of the public sector with open data and tapping external data sources (e.g., weather, traffic, location) to deliver personalized experiences to customers. Technology management executives need to track the business use of easily available external data (especially when paired with cloud-based analytic tools) before they are asked to govern or integrate data sources in new ecosystems.

4. **Cognitive computing takes its first steps to commercialization.** Cognitive computing brings together previously siloed analytics approaches like natural language processing, text analytics, and predictive analytics inside machine learning solutions that understand human

intention and provide answers with transparent confidence. But people have been collaborating on the artificial intelligence frontier for decades, so what's different now? 1) Big data tools and techniques accelerate the viability of deep learning systems, and 2) large vendors such as IBM and Google are making significant investments and acquisitions in this space. Over the next few years, we will see a growing number of "prepackaged" cognitive solutions — often running in the cloud — to hide the immense complexity of the underlying technology for the end user and make it more economically feasible to experiment. Vendors are proposing use case scenarios of varying complexity, from supporting oncology treatment to automating call center conversations.

What it means: Developing advanced data capabilities, including cognitive computing, will be a "must" in the years to come. But is 2014 the right year to experiment with this emerging technology? If you have business requirements that include the ability to recognize natural language, create and test a hypothesis, iterate and explain, then you should consider starting your journey into cognitive computing now.

5. **The hype around data scientists will climax.** Currently the demand for statistical and mathematical skills outstrips the available supply, so data scientists hold one of the world's hottest (did someone say "sexiest"?) jobs. However, growing demand will lead to larger numbers of trained young people within a few years. Plus vendors will start to "prepackage" complex data models for their clients in order to address a larger market for their otherwise complex solutions. After a transition period through "data scientist fever," we will quickly see the market demand level off.

What it means: The gap in talent is not where you think it is. Let the service providers scramble to hire data scientists. Instead, focus on what you actually need and what kind of talent you already have in-house. Expertise in architecting and deploying business intelligence solutions, for example, will remain a must-have. While vendor applications may be sufficient to collect, crunch, and visualize the numbers, the lacking — but essential — skill is the ability to understand data's implications for the business. Before hiring overtrained and overpaid data scientists, look into how advanced analytics tools now simplify statistics and data visualization and focus on how to expand data literacy across your workforce.

6. **Data governance becomes more inclusive and extensive.** As the variety and volume of information expands, the question of who owns, manages, and stewards it will get more and more complex. It may not be economical, efficient, or best practice to keep data in-house. Instead data might best be managed by consumers themselves, prompting questions as to the requirements for its use. Today's governance conversations are dominated by those responsible for compliance enforcement. Tomorrow's governance will reflect diverse voices including customer insights professionals who challenge entrenched assumptions and encourage exploration of "messy" data like customer sentiment. New data governance platforms will evolve to track and calculate the risk and rewards of working with diverse data of erratic quality.

What it means: To properly address the security, privacy, ethics, and compliance concerns that are top of mind in today's world, encourage technology management and business leaders to work together to define new ground rules and data certification processes. Careful consideration of how your firm treats data — especially customer data — needs to be woven into business capabilities. But it doesn't end with security and privacy — your overall data governance approach must also evolve to accommodate new (big) data capabilities. Consider applying new technology and approaches such as data governance platforms not only to manage and analyze but to help with the governance of their new data capabilities and processes.

7. **Enterprise information management remains just too big to plan around.** As limitations around data processing and standardization lift, data strategies are expanding to include a wide range of information types, from tweets to customer notes. But the divide between data and content in the enterprise context will remain entrenched. Most business and transactional content is siloed from business and transactional data. Why? Content needs descriptive structure to be discovered and commingled with data, and adding structure to content is an unsolved problem, despite entity identification and extraction and other text analytics techniques. Enterprises are still years away from conceptualizing information (both data and content) holistically and defining a strategy around an accepted universal life cycle, from capture/creation to how it is dispositioned or archived.

What it means: While most don't know what enterprise information management is, every information worker understands and experiences the pain of inadequate access to high-quality information, especially the executives who demand interactive dashboards on their iPads. Therefore, instead of trying to push a holistic information architecture or data integration agenda, engage with C-suite executives using storyboarding techniques to communicate what is possible and what is required to make substantial changes.

SUPPLEMENTAL MATERIAL

Contributors To This Research

The following Forrester analysts contributed their expertise and insights to this report: Jennifer Belissent, Ph.D., Martha Bennett, Boris Evelson, Michele Goetz, Charles Green, Mike Gualtieri, Brian Hopkins, Gene Leganza, Henry Peyret, Jody Sarno, and Heidi Shey.

ENDNOTES

- ¹ Source: Forrsights Strategy Spotlight: Business Intelligence And Big Data, Q4 2012.
- ² Forrester has provided a toolkit to clarify and illuminate the most common big data patterns. Use this research as a basis for business conversations. Study the problems we identified and the results firms told us about. Use these examples in your business strategy conversation to stimulate discussions about what is

really possible. Use this research to understand technology architecture patterns. In formulating strategies to provide more flexibility and lower data cost to your business, study these patterns and lessons learned to identify the data management technology building blocks your firm really needs. Use these patterns as part of your vendor selection and solution design. For more, see the June 11, 2013, “[The Patterns Of Big Data](#)” toolkit.

- ³ For example, Seabourne helps companies monetize their data by moving it online (<http://seabourneinc.com/>). DataSift aggregates, processes and delivers large volumes of social data feeds to clients for social intelligence analysis (<http://datasift.com/>).
- ⁴ For example, one of the first tasks in opening a new fast food restaurant is filing with the FCC to get the permits to operate the drive-through technology. Data aggregators are able to cleanse, format, and aggregate such public data in order to help investors predict real estate growth in a region or monitor expansion of a particular restaurant chain.