Harness The Value Of Your Data Capital To Drive Business Success

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Executive Summary

The digital era has ushered in a proliferation of data that powers modern businesses. When leveraged properly, organizations are seeing the potential of data to drive better outcomes across all aspects of their business. Using data to support different workflows, analytics, and activities transforms it into data capital — a digital asset that will drive value for the business. The extent to which an enterprise aligns its organization around this data capital mindset — in both the way they use data and the way they invest in data technology — can have lasting impacts on the success of the business.

In February 2019, Dell EMC and Intel commissioned Forrester Consulting to evaluate whether the ability to harness and apply data and analytics at every opportunity is fast becoming a prerequisite for success. To test this, Forrester conducted a global survey of 516 IT decision makers. The survey found that companies with more mature data capital practices — leveraging more data types, managing data securely, governing data appropriately, and modernizing infrastructure for optimal performance — see greater positive business outcomes.

On average, companies with more mature data practices are over 2x more likely to see high levels of improvement on key metrics related to data use cases.

KEY FINDINGS

› Most companies are placing higher importance on data today than they have in the past, specifically for internet-of-things, customer, and backup data.

› Our survey found that 56% of respondents believe their current data storage infrastructure limits their ability to get the most from their data.

› Companies with more mature data practices are 3x more likely to see high levels of improvement on key metrics related to marketing and sales and 2.7x more likely to see large improvements in support of company workflows.

› Companies who place less value on their data and data management must focus on getting the right data strategy and infrastructure in place in order to prepare for the digital era.

› On average, improving the management and usage of data yields significant positive impacts such as a 39% reduction in the number of incidents involving bad data and a 48% increase in the number of employees leveraging data in everyday workstreams.

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Data's Value Is Increasing But Most Companies Are Not Prepared To Fully Capitalize On It

Businesses today have more data available to them than they know what to do with. Yet, an increasing number of decision makers realize the untapped potential that lies within these vast troves of data, spread across many different sources (see Figure 1). IoT, customer, and backup data topped the list of data types that have risen in importance over the past two years with 55% of respondents saying the importance of IoT data has increased, 51% for customer data, and 50% for backup data.
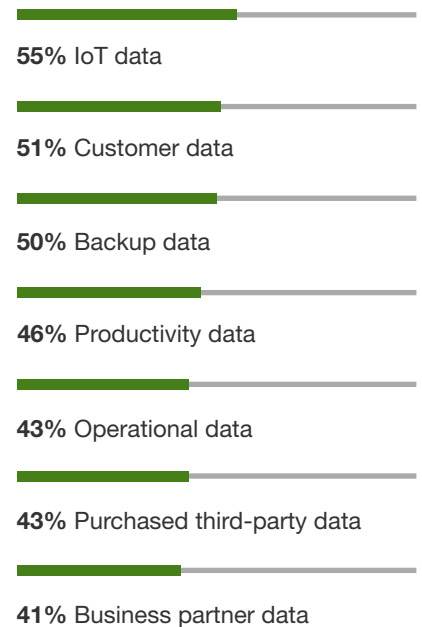
However, despite the increasing importance of data, 56% of companies believe that their current data storage and management infrastructure is hindering their ability to get full value from their data (see Figure 2). Our survey found that this inadequate infrastructure is impacting companies in two significant ways:

› **Lack of confidence in their data.** Decision makers question the completeness and accuracy of their organization's data. When asked about their confidence in the data, only 43% expressed high confidence. As the saying goes, "garbage in, garbage out." Decision makers who don't trust their data won't take the risk of using it to influence business decisions. Put simply, it becomes problematic to build digital transformation on such an unstable foundation.

› **Limited use of the full breadth of available data.** For most data types, an average of approximately 35% to 40% of data is going unused (see Figure 3). While utilization of 100% of data is not realistic or necessary, this amount of unused data is significant and represents potential missed opportunities to drive new revenue or services, improve customer service and satisfaction, or to spur business innovation. Also, respondents reported that 46% of purchased third-party data is also going unused, on average, which represents a wasted investment for many companies. It's not about the misuse of data, but about the missed use of data.

Figure 1

Companies are placing greater importance on their data
(% of companies placing increased importance on these data types in the past two years)

55% IoT data

51% Customer data

50% Backup data

46% Productivity data

43% Operational data

43% Purchased third-party data

41% Business partner data

Base: 516 IT decision makers in NA, EMEA, APJ, and Brazil
Source: A commissioned study conducted by Forrester Consulting on behalf of Dell EMC and Intel, February 2019

Figure 2: Poor Data Infrastructure Limits The Value Of Data
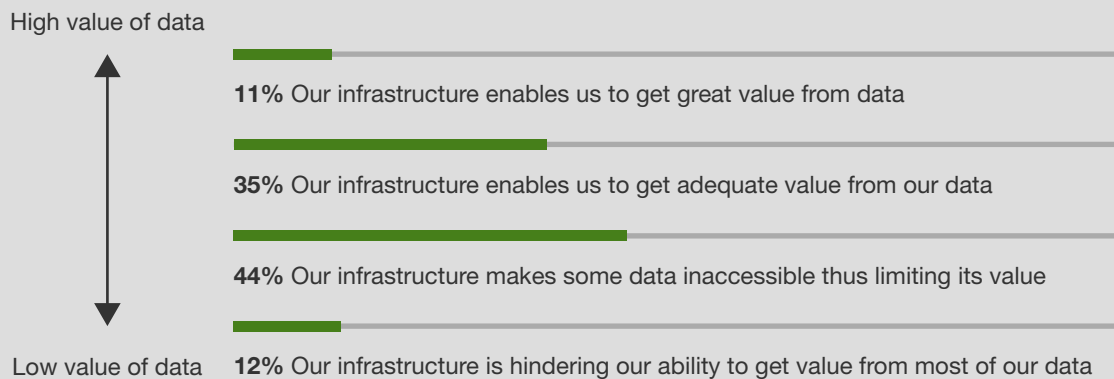
High value of data

11% Our infrastructure enables us to get great value from data

35% Our infrastructure enables us to get adequate value from our data

44% Our infrastructure makes some data inaccessible thus limiting its value

Low value of data

12% Our infrastructure is hindering our ability to get value from most of our data

Base: 516 IT decision makers in NA, EMEA, APJ, and Brazil
Source: A commissioned study conducted by Forrester Consulting on behalf of Dell EMC and Intel, February 2019

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Figure 3

"What percentage of data is going unused?" (Average percentage)

46% — Purchased third-party data

45% — IoT/smart device data

44% — Backup data or cold storage data

40% — Productivity data

40% — Business partner data

40% — Business process/operational data

37% — Customer data

Base: 516 IT decision makers in NA, EMEA, APJ, and Brazil
Source: A commissioned study conducted by Forrester Consulting on behalf of Dell EMC and Intel, February 2019
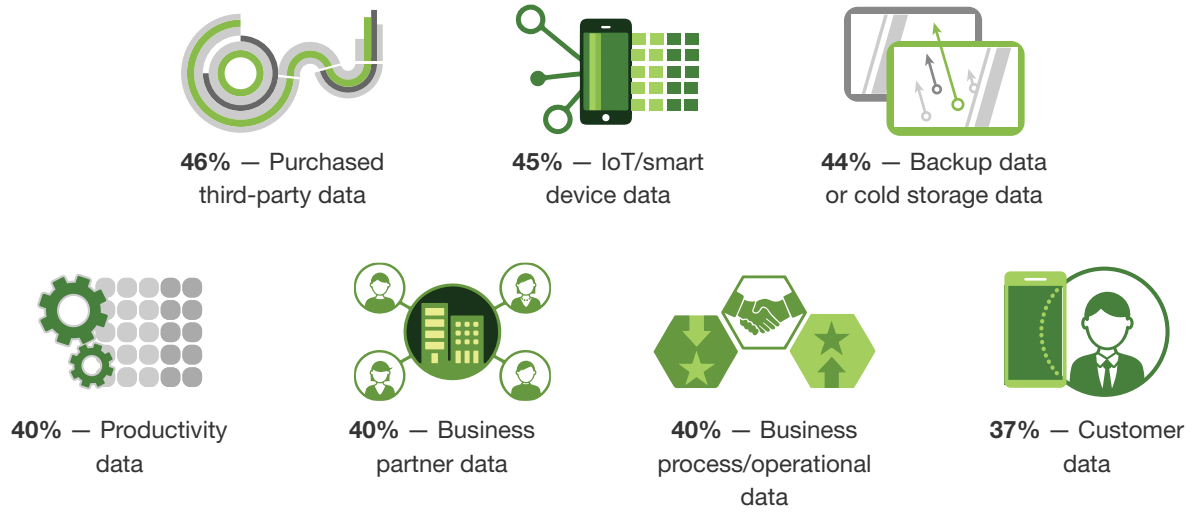
Data Capital Maturity Influences Business Outcomes

While the desire to improve the use of data is widespread, our study found that companies are at varying stages of maturity when it comes to the preparedness of harnessing their data potential. Forrester defines this as data capital maturity, or, the extent to which a company has the right data strategy, resources, infrastructure, and management solutions to effectively utilize its data to drive business outcomes (see the Data capital Maturity sidebar). For this study, we focused on two primary maturity groups:

› **Laggards.** Companies with low data capital maturity who represented 25% of the survey sample.

› **Leaders.** Companies with high data capital maturity who represented 20% of the survey sample.

The remaining 45% of respondents were classified as transitioning between these two maturity groups, but for this report we focused our analysis on the differences between high and low maturity groups. Through a comparison of data capital maturity laggards and leaders, our study highlights key differences in how companies on either side of the spectrum approach data capital, while also revealing important next steps forward that laggards can take to improve their maturity and reap greater benefits from their data. All companies must go through the same journey, but leaders have been able to address the more fundamental components of maturity (i.e., technology, strategy, and leadership). This allows leaders to focus on more forward-looking opportunities, while laggards continue to work on getting the right foundation in place.

DATA CAPITAL MATURITY CATALYZES BUSINESS SUCCESS

Our survey found that data capital maturity leaders experience more significant business improvements through the utilization of data. We asked respondents to indicate to what extent effective data usage has driven incremental improvements on key metrics related to various data use cases (e.g., supporting company workflows, training algorithms for AI, optimizing operational processes, enabling customer services, and financial and business planning). Overall, companies see the biggest uplift from data in customer-oriented use cases — customer insights and customer service (see Figure 4). However, the differences between leaders and laggards were substantial:

› **Data capital leaders achieve greater improvements across the board.** Leaders were much more likely than laggards to report over 20% improvement in key performance metrics across all use cases.

› **Marketing and sales support showed the biggest delta between leaders and laggards.** Data-driven marketing delivers messages that better resonate with customers. In sales, customer prospecting improves dramatically as profiles, preferences, and past purchases enable better prioritization of leads and higher conversion rates. Leaders were 3x more likely to achieve a 20% improvement in marketing and sales metrics.

Data-capital maturity is defined by:

✔ The degree to which a company views and uses data as a very valuable business asset

✔ Level of business priority put on improving the ability to leverage data

✔ Level of commitment to software-defined data centers (SDDCs) as a long-term strategy

✔ The degree to which data storage and protection covers a wider variety of environments (public cloud apps, endpoint devices, public cloud, etc.)

✔ Percentage of business workloads using of all-flash arrays

✔ Sophistication of data tech road map

✔ Comprehensiveness of data backup plan/process

✔ Level of data leadership to drive the strategy behind the collection, governance, and use of data across the organization

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Figure 4

	% of survey respondents seeing 20% improvement or higher on key metrics related to use case		Maturity delta (difference factor between leaders and laggards)
Data use cases	**Laggards**	**Leaders**	
Marketing and sales	12%	36%	3x
Supporting company workflows	12%	32%	2.7x
Security/IT operational analytics	21%	28%	2.3x
Operating customer-facing applications	13%	30%	2.3x
Customer service	23%	52%	2.3x
Financial and business planning	13%	29%	2.2x
Training algorithms for AI	17%	35%	2.1x
Customer insights	24%	42%	1.8x
Optimizing operational processes	18%	33%	1.8x
Risk management	25%	45%	1.8x

Base: 234 IT decision makers in NA, EMEA, APJ, and Brazil
Source: A commissioned study conducted by Forrester Consulting on behalf of Dell EMC and Intel, February 2019

› **Support for company workflows came in second.** Using data to automate workflows within an organization allows for streamlined processes and greater efficiency. Companies with greater data maturity are significantly more likely to see improvements in these metrics: leaders were 2.7x more likely to see 20% improvement or higher.

As a company's data capital maturity improves, its focus can expand from addressing urgent customer-facing use cases to a more holistic use of data across business, operational, and IT use cases. Leaders' success in these areas is demonstrated by the larger delta in performance improvements in marketing and sales, company workflows, and IT operational analytics. This suggests an opportunity for all companies to expand their vision of how data capital can drive business value in more significant ways.

Leaders were 2.7x more likely to see large improvements for company workflows.

BARRIERS TO BETTER DATA USAGE REMAIN BUT DIFFER BETWEEN LEADERS AND LAGGARDS
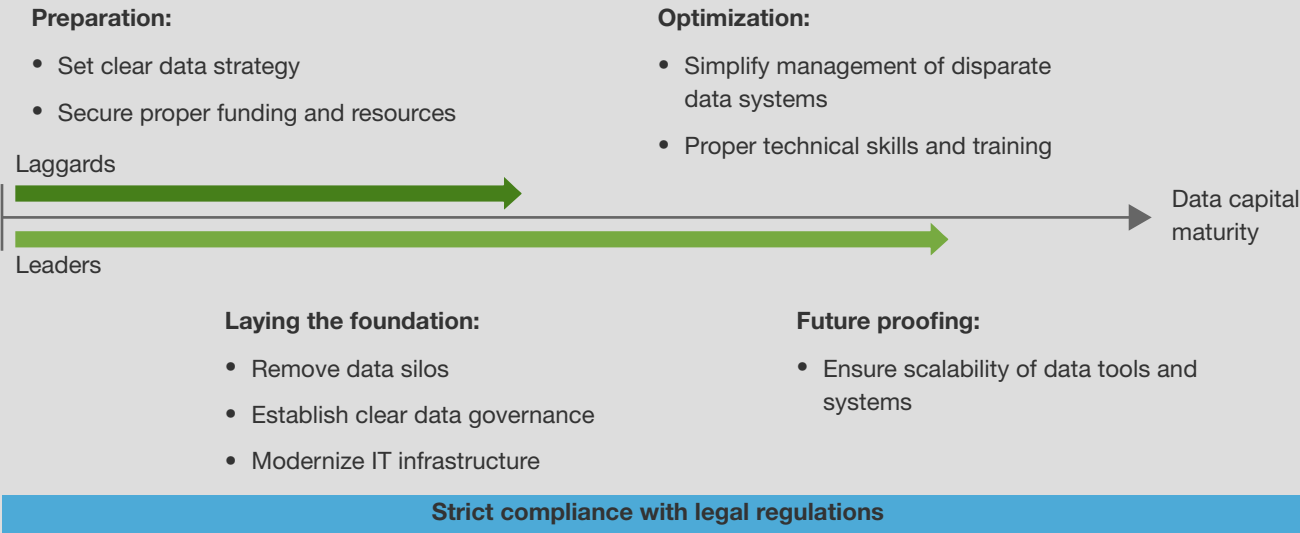
With the majority of companies acknowledging the increasing value of data, the question then becomes, what is holding organizations back from fully taking advantage of that data? One of the top barriers for both laggards and leaders was the lack of skills. The rapid evolution of tools and technologies for data and analytics is difficult for all companies to keep up with. Beyond skills, our survey found that laggards and leaders both face challenges, but they are very different in nature. Most leaders, having already addressed the more foundational/internal challenges in working with data, now face a new set of barriers in response to their increasingly sophisticated use of data. Laggards, on the other hand, are still working to solidify their foundation for driving maturity improvements:

› **Laggards face internal barriers.** These companies are more commonly struggling with the foundational issues of data capital maturity, e.g., a lack of clear strategy, siloed organizational structure, and insufficient resources. For these companies, the challenges are with getting the right building blocks in place through which their data usage can improve. The good news, however, is that the remedy to many of these barriers is clear and easily within reach for companies that recognize these challenges.

› **Leaders struggle more with external barriers.** Leaders have typically solved more of the foundational challenges of having strong data strategies, and the technology to support them, so the nature of their barriers skew more toward factors external to the company that they can't fully control (see Figure 5). A fragmented vendor market (i.e., too many vendors with disparate systems) and strict legal and compliance regulations also impede leaders' efforts in leveraging data. These are issues are more top of mind for leaders who can worry less about the internal, foundational challenges that laggards are dealing with.

> Most leaders have already addressed strategy, organizational, and leadership support challenges in working with data.

Figure 5: Companies Must Address Internal Data Challenges To Ensure Maturity

Data Capital Maturity Roadmap:

Preparation:
- Set clear data strategy
- Secure proper funding and resources

Optimization:
- Simplify management of disparate data systems
- Proper technical skills and training

Laggards →

Leaders →

Data capital maturity

Laying the foundation:
- Remove data silos
- Establish clear data governance
- Modernize IT infrastructure

Future proofing:
- Ensure scalability of data tools and systems

Strict compliance with legal regulations

Source: A commissioned study conducted by Forrester Consulting on behalf of Dell EMC and Intel, February 2019

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Technology Infrastructure Plays A Key Role In Improving Data Capital Maturity

As businesses strive to understand the value of data and how to use it properly, it is imperative that they improve their capacity to transform raw data into data capital. This effort typically starts with an investment in data storage technology. Whether it's IT infrastructure, software defined infrastructure, or hyperconverged infrastructure, companies are learning that investing in their data through modernized storage and data protection infrastructure is an important step in realizing their desired outcomes. To that end, over half of surveyed companies have made recent investments in data storage and management solutions, with another 32% planning to invest in the next 24 months.

However, as companies continue to make technology improvements to enhance their ability to collect and extract value from data, it often creates a more challenging environment for protecting data. Companies recognize that new data technology is effective only to the extent that it enables more effective use of data, thus making data protection a critical component of any new investment (see Figure 6). When asked what was motivating improvements in data infrastructure technology, the two most common drivers were:

› **The need for better data protection.** While data protection is a key motivator for all companies, a higher percent of leaders are taking greater steps to better protect against data loss. Security breaches regularly make headlines today, and business leaders want to avoid that kind of negative press, which risks both revenue and reputation. However, protecting against breaches is just one part of data protection. As businesses become increasing digital in nature, revenue streams become more dependent on data and companies must ensure that data is continuously available to support business processes. The result is an effort to improve centralized data governance (63% of leaders, 54% of laggards), improving application-level security (59% versus 44%), and maintaining backups of essential data (52% versus 44%). Overall, leaders in our survey are doing more to protect data in more places. For example, 67% of leaders have deployed data protection solutions for endpoint devices and 60% for physical servers and virtual machines (VMs), compared to 36% and 41% of laggards, respectively (see Figure 7). The broader protection enables leaders to more confidently leverage data, regardless of where it resides.

Over 50% of companies have made recent investments in data storage and management solutions.

Figure 6

"What are the top drivers motivating your business to invest in new data storage and management technology?"

42% Data security and protection

40% Expanding advanced analytics capabilities

36% Regulatory compliance

35% Digital transformation efforts

34% Need for better data governance tools

33% Desire to expand usage of data across the company

32% Desire to generate revenue from data products or services

32% Our current data quality/accuracy is inadequate

31% Desire for a more holistic view of the business and customers

30% We want to leverage better, and more, business insights

27% We need to keep up with how competitors are using data

Base: 516 IT decision makers in NA, EMEA, APJ, and Brazil
Source: A commissioned study conducted by Forrester Consulting on behalf of Dell EMC and Intel, February 2019

Figure 7

"Has your organization deployed data protection solutions for any of the following environments?" (Select all that apply)

■ Leaders (N = 105)   ■ Laggards (N = 129)

Public cloud applications
78%
68%

Endpoint devices
67%
36%

Public cloud environments
62%
52%

On-premises physical servers and VMs
60%
41%

Virtual environments
51%
34%

Leaders can more confidently leverage data, regardless of where it resides.
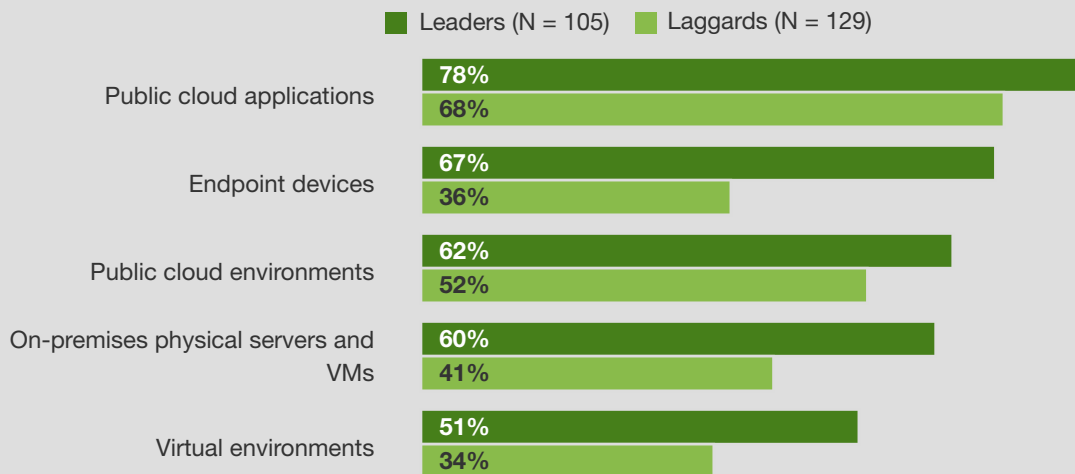
Base: 234 IT decision makers in NA, EMEA, APJ, and Brazil
Source: A commissioned study conducted by Forrester Consulting on behalf of Dell EMC and Intel, February 2019

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› **The need to improve data accessibility and quality to support predictive analytics, machine learning, and AI workloads.** Technology decision makers are looking to be more intentional with how they deploy new data technology to support key outcomes. Fifty-two percent of leaders from our survey considered support for advanced analytics capabilities to be an important driver, compared to just 30% of laggards. More mature companies take a strategic look at how technology supports more sophisticated data usage, whereas laggards are still trying to get the right technology in place to support key data storage and management functions.

As companies implement more modernized data infrastructures (i.e., scale-out architectures, software-defined data centers, centralized data storage) to both protect data and make it more accessible to support new use cases, it drives greater confidence for decision makers around the quality of the data. When comparing responses from leaders and laggards about how confident they are that their data is complete and accurate, 68% of leaders expressed high confidence compared to just 33% of laggards.

Investment In Data Capital Drives Lasting Positive Outcomes

Regardless of where they stand today, most companies have invested, or are investing more in data capital maturity (i.e., data infrastructure, technology, data management, data personnel, etc.). When looking at data priorities going forward, leaders are taking steps to more strategically leverage their data, while laggards are laying the foundation to make long strides toward catching up. As laggards play catch-up, leaders enjoy the benefits of fine-tuning their data strategy.
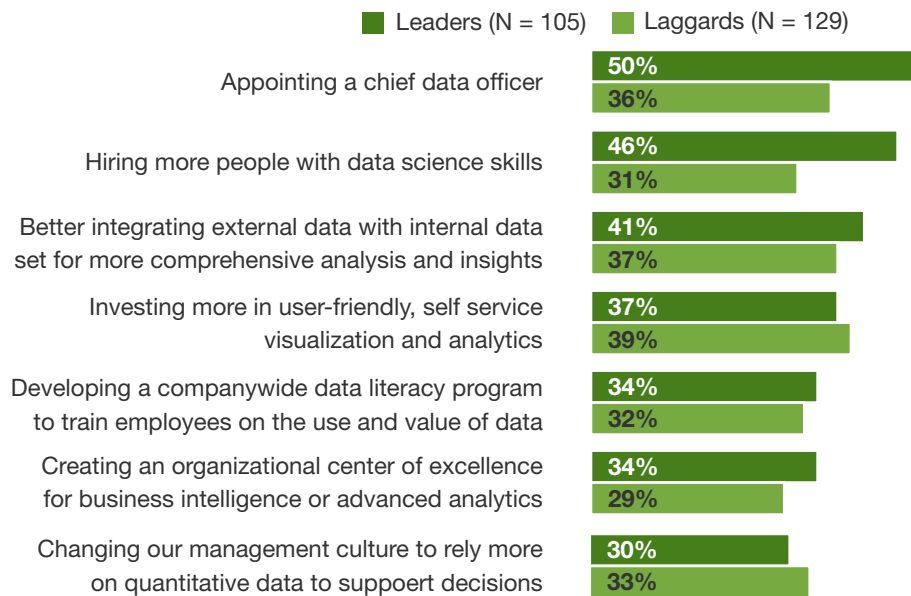
› **Laggards focus on foundational improvements as a starting point.** Data priorities for laggards reflect a broader mix of initiatives — from better data integration, to better analytics tools, to better strategy through hiring chief data executives — with no one initiative standing out far above the rest (see Figure 8). Because laggards haven't made substantial investments to this point, their spending will be distributed across many different initiatives and could create challenges in trying to do too much at once. As these basic initiatives begin to take hold, laggards can then begin taking a more strategic approach with prioritizing individual data initiatives.

› **Leaders focus on leadership and skills as a way to scale.** Most data capital maturity leaders have already built out their data capital foundations. They now must focus on initiatives and investments to better scale their use of data — 50% of leaders indicated that appointing chief data executives and hiring personnel with data science skills (46%) were two top initiatives (see Figure 8). These skills are important capabilities for laggards as well, but less urgent as they must first establish their data infrastructure capabilities to build confidence in using their data.

68% of leaders expressed high confidence in data quality and accuracy compared to just 33% of laggards.

Figure 8

"What are your company's top initiatives for improving its management and usage of data?"

■ Leaders (N = 105) ■ Laggards (N = 129)

Appointing a chief data officer
50%
36%

Hiring more people with data science skills
46%
31%

Better integrating external data with internal data set for more comprehensive analysis and insights
41%
37%

Investing more in user-friendly, self service visualization and analytics
37%
39%

Developing a companywide data literacy program to train employees on the use and value of data
34%
32%

Creating an organizational center of excellence for business intelligence or advanced analytics
34%
29%

Changing our management culture to rely more on quantitative data to suppoert decisions
30%
33%

Base: 234 IT decision makers in NA, EMEA, APJ, and Brazil
Source: A commissioned study conducted by Forrester Consulting on behalf of Dell EMC and Intel, February 2019

THE POTENTIAL BENEFITS OF IMPROVED MANAGEMENT AND USAGE OF DATA ARE THE SAME REGARDLESS OF MATURITY
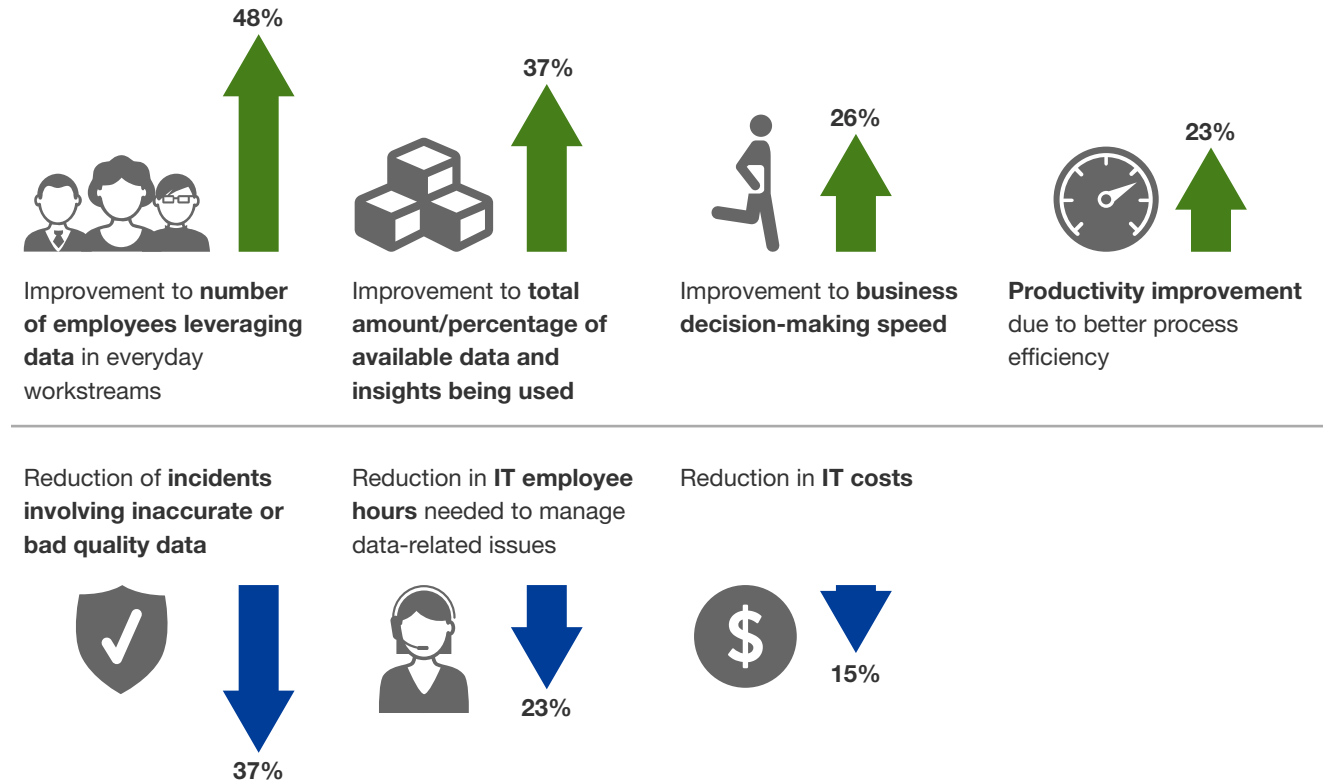
Leader or laggard, the changes that organizations are making to improve the way they use and manage data are driving substantial business improvements. By improving their management and usage of data, 41% of our total survey respondents reported an increase in their ability to scale with data volumes, 37% reported an increase in confidence of data security and backups, and 35% reported an increase in the ability to maintain compliance with data regulations. Increased business innovation and improved customer experience were also common areas of benefit.

We asked survey respondents to quantify the impact that improvements to data management and usage have had on a few specific business metrics, and found that companies, on average, were experiencing a 48% improvement to the number of employees using data tools in everyday workstreams, a 37% improvement to the total percentage of data being used, a 36% reduction in incidents involving inaccurate or bad data, and a 27% increase in decision-making speed (see Figure 9). This shows that companies are making the right investments to combat the challenges they indicated around data quality and data usage, and that when approached correctly, the potential benefits are significant.

On average, improvements to data management and usage improved business decision making speed by 27%.

Figure 9

Businesses are experiencing significant positive outcomes as a result of more effective management and use of data (Numbers represent average % change)

48%

Improvement to **number of employees leveraging data** in everyday workstreams

37%

Improvement to **total amount/percentage of available data and insights being used**

26%

Improvement to **business decision-making speed**

23%

Productivity improvement due to better process efficiency

Reduction of **incidents involving inaccurate or bad quality data**

37%

Reduction in **IT employee hours** needed to manage data-related issues

23%

Reduction in **IT costs**

15%

Base: 516 IT decision makers in NA, EMEA, APJ, and Brazil
Source: A commissioned study conducted by Forrester Consulting on behalf of Dell EMC and Intel, February 2019

Key Recommendations

The floodgates are open and the data is pouring in. IT decision makers recognize the positive impact that data can have on their organizations, but they must improve their data capital maturity to take full advantage of their data. Companies who have made this shift are more commonly experiencing over 20% improvement in key performance metrics. For companies wanting to fully harness the value of their data capital, those same opportunities are within reach with the right improvements.

To further progress on your journey to becoming a data capital leader, Forrester recommends the following:

Raise the conversation around data from the shop floor to the top floor. Data is a strategic business asset driving differentiation and competitive advantage. Leaders show that investments in data capital deliver significant improvements in key performance metrics, which provides excellent proof points for why business leaders need to care about data capital. Data storage, protection, and management are the means to that end.

Embrace an insights-driven culture with leadership and literacy. Appoint leadership to drive an understanding of the value of data and promote its use. That requires investments in people (hiring and developing skills sets and establishing centers of excellence) and in the technologies needed to enable them. At more mature companies, chief data and analytics officers head centers of excellence, which coordinate training and access to appropriate tools.

Simplify your vendor and infrastructure technology ecosystem. Even mature companies indicate challenges with the number of vendors and disparate systems, and the skills required to implement them. To facilitate infrastructure modernization, companies must evaluate the benefits of solutions from a single or limited number of data infrastructure vendors.

Invest in modern data infrastructure to break down barriers and reap the benefits of data capital. Data silos and the struggle to manage messy data continue to plague less mature companies. But even 37% of more mature organizations report that their infrastructure limits data access. Modern data storage, protection, and management solutions can help. If large capital investments are an issue, put in place a refresh cycle to continually update this critical data infrastructure. Vendors with cloud-like consumption models and flexible financing can help.

Secure assets to increase trust and ensure actions and outcomes. Data and the insights derived from it are only valuable if used to drive actions and deliver outcomes. Those actions require trust in the accuracy and integrity of the data. The well-worn adage "garbage in, garbage out," instills fear in decision makers who depend on the insights. With data security top of mind among both leaders and laggards, no one gets fired for better protecting data capital.

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Appendix A: Methodology

In this study, Forrester surveyed 516 IT decision makers from enterprises in the US, EMEA, Asia Pacific and Japan (APJ), and Brazil to evaluate how their companies are leveraging data to drive positive business outcomes. Survey participants were from a mix of IT roles including senior leaders and enterprise architects, and had decision-making responsibility for data protection and data storage investments. Questions provided to the participants asked about their company's data infrastructure, data challenges, data priorities, and realized outcomes from data management and usage improvements. Respondents were offered a small incentive as a thank you for time spent on the survey. The study was completed in February 2019.

Appendix B: Demographics/Data

INDUSTRY

Financial	15%
Telecommunications/ISP/web hosting	8%
Technology	8%
Transportation & logistics	7%
Retail/wholesale	7%
Construction/engineering	7%
Healthcare	6%
Business services	6%
Media	5%
Life sciences	5%
Energy & utilities	4%
Consumer packaged goods	4%
Government	4%
Manufacturing (process)	3%
Manufacturing (discrete)	3%
Education (college/university)	3%
Education (K-12/primary/secondary)	3%
Nonprofit organization/NGO	1%

COUNTRY

NA
30%

EMEA
30%

APJ
30%

Brazil
9%

COMPANY SIZE

7%
20,000 or more employees

19%
5,000-19,999 employees

25%
2,500 to 4,999 employees

30%
1,000-2,499 employees

19%
500-999 employees

100% in IT roles

RESPONDENT LEVEL

Most senior IT executives at my company	10%
Senior IT management	30%
IT management	39%
IT architecture/planning	21%

Base: 516 IT decision makers in NA, EMEA, APJ, and Brazil
Source: A commissioned study conducted by Forrester Consulting on behalf of Dell EMC, February 2019

This study was commissioned by Dell EMC and Intel. To learn more about Dell EMC's products and solutions, please visit https://www.dellemc.com/datacapital.

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