

Analytics in the Cloud

Report Summary

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An ENTERPRISE MANAGEMENT ASSOCIATES® (EMA™) End-User Research Report

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Report Summary – Analytics in the Cloud

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1. Executive Summary

Cloud adoption increased over the past several years. Starting with the use of Salesforce.com for customer relationship management, organizations leveraged the cloud to provide platform, operational, and analytical support. These organizations have experienced the benefits of quicker time to implement, while analytics and business intelligence in the cloud were slower to reach widespread acceptance. Now, organizations are taking advantage of platforms, data integration, and analytics offerings to address their analytics and business intelligence requirements.

To determine the status of **Analytics and Business Intelligence in the Cloud**, ENTERPRISE MANAGEMENT ASSOCIATES® (EMA™) analysts embarked on an end-user research study to examine the current state of cloud-based analytics. For this research, EMA invited pre-qualified business stakeholders and information technology professionals to complete an extensive web-based survey. As part of the survey, 208 panelists responded to an invitation to provide their insights on cloud-based analytics and business intelligence strategies and implementation practices. To offer a neutral enterprise view, the respondent pool was also balanced. Business stakeholders represented 53% of respondents. Technologists accounted for 47% of the panel. The survey was executed in September 2015 with respondents from around the world, including North America and Europe.

Survey respondents were asked to identify the depth and extent of their participation in cloud-based strategies for analytics and business intelligence. More than 29% of respondents indicated that they had adopted cloud-based strategies and those strategies were an important part of their business. Another 30% of respondents indicated those strategies were adopted and essential to their businesses. These findings place a majority (59%) of the EMA panel into an extensive cloud-based strategy category or classification. This is an increase of 3% over 2014 respondents, showing the slow maturity of cloud analytics adoption within organizations.

EMA panelists were asked to share the industry with which they identify. A wide range of industries was included in the survey panel, including nine separate industries. The top four industries represented are: manufacturing (over 19% of panel respondents), industrial (over 14%), utilities (14%), and retail (13%).

Looking at the overall project sponsors for the implementations above, Information Technology stakeholders are the primary sponsors (21.9%). The next four sponsors, or line of business stakeholders, are sales (17.7%), marketing (13.4%), finance (10.6%), and customer care (8.7%). These four sponsors have significant influence on the implementation of cloud-based projects. This finding is reflected in the type of project goal and objectives associated with individual projects. Sales sponsors need insight into sales analytics projects. Marketing requires actionable intelligence into the activities associated with cross-sell/up-sell. Finance desires to have controls and visibility into risk management projects.

For the purposes of this research, cloud analytics inclusion requires the adoption of a portion of the analytics infrastructure to be situated within the cloud. For instance, an EMA panel respondent may leverage analytics in the cloud but support their data management in their on-premises data center or vice versa. As organizations' implementations become more robust, they are more likely to move towards broader cloud-based environments.

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1.1. Key Findings

- **Cloud-based strategies are important** – 59% of respondents identified their organization as having cloud-based analytics as currently adopted and essential or currently adopted and important in their organization, up 3% from last year.
- **Not just a single project** – Over 27% of organizations indicated they had over five projects associated with their cloud-based analytics strategies. Many organizations are starting or expanding their cloud projects; over 59% of organizations reported between one and three projects.
- **Locking data down** – Security was the single most critical component (47.6% of respondents) of cloud-based analytics implementations. 80.3% listed security as either extremely critical or very critical.
- **Reliability and costs** – Outside of security, respondents ranked reliability, reliability, and processing performance as the most critical components of their cloud-based analytics implementations. manageability/self-service, quick-start packages, and vendor brand were, relatively, the least critical components.
- **Cost certainty and length of engagement** – Many organizations prefer to take advantage of annual subscription (47.1%) agreements with their cloud service providers. Alternatively, some organizations prefer to look at multi-year subscriptions to ensure fixed costs over time.
- **Budgets for projects** – 49% of the respondents indicated that their budgets fell within a band of \$1 million to \$25 million on an annual basis for 2015. This was down by 7% over respondents from 2014.
- **Increasing funding coming from IT** – Over half of the organizations indicated that they were receiving funding from IT department budgets. This is up by 5% over 2014, indicating that organizations are increasingly looking at IT departments to fund cloud analytics initiatives.
- **Businesses want better information visibility** – The study revealed that the primary business driver is to increase information visibility to lead to more business efficiencies (18.6%). The second most popular driver is improved speed to implementation on analytical projects (16.6%) associated with cloud-based analytical initiatives.
- **Technical agility drives requirements** – Data security ranks as the first requirements driver (18.1%), with improved technical agility (16.1%) and improved software availability (15.1%) coming in second and third, respectively. Data security is up 2.5% over last year and the other two top drivers are up by one percentage point over 2014.
- **Leading project objectives** – Sales analytics (18.8%) was the leading project goal for organizations implementing cloud-based analytics and business intelligence. Exploration and discovery (14.8%) and external stakeholder/third-party access portal (13.8%) ranked second and third.
- **Who is sponsoring projects** – IT/data center provides the highest level of sponsorship at 21.9%. Line of business departments—sales (17.8%), marketing (13.4%), finance (10.6%), and customer service/customer care (8.7%)—all have significant influence on the cloud-based analytics projects implemented by the survey panel.

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2. Business Intelligence and Analytics in the Cloud

Cloud adoption has been steadily expanding since the early 2000s, marked by the mainstream access of Salesforce.com. With faster time to implementation, more flexible payment options, and better accessibility, organizations are looking at expanding their cloud implementations. Cloud adoption for CRM and other operational applications have been commonplace, with cloud analytics projects taking longer to adopt. Organizations seem to struggle more with the concepts surrounding business intelligence and analytics in the cloud due to their added complexities in comparison with CRM and ERP applications.

The adoption of cloud-based analytics and business intelligence requires organizations to capture, store, transform, and deliver analytics to end-users. Doing so leads to more complexities than other cloud-based applications. Additionally, organizations with mature on-premises analytics implementations need to identify the benefits of transitioning part or all of their internal platforms and BI-related infrastructure to the cloud.

One challenge includes the fact that organizations cannot follow one specific set of processes to develop their cloud analytics strategy. Depending on the components of cloud they are implementing – such as their platform, data integration processes, reporting, dashboards, or advanced analytics – the development of a full project plan is required. Each plan and the way it is developed will depend on many factors and does not follow a simple framework in the same way as traditional CRM or ERP cloud-based offerings. Therefore, organizations need to be committed to their cloud implementations and provide accurate use cases to ensure implementation success.

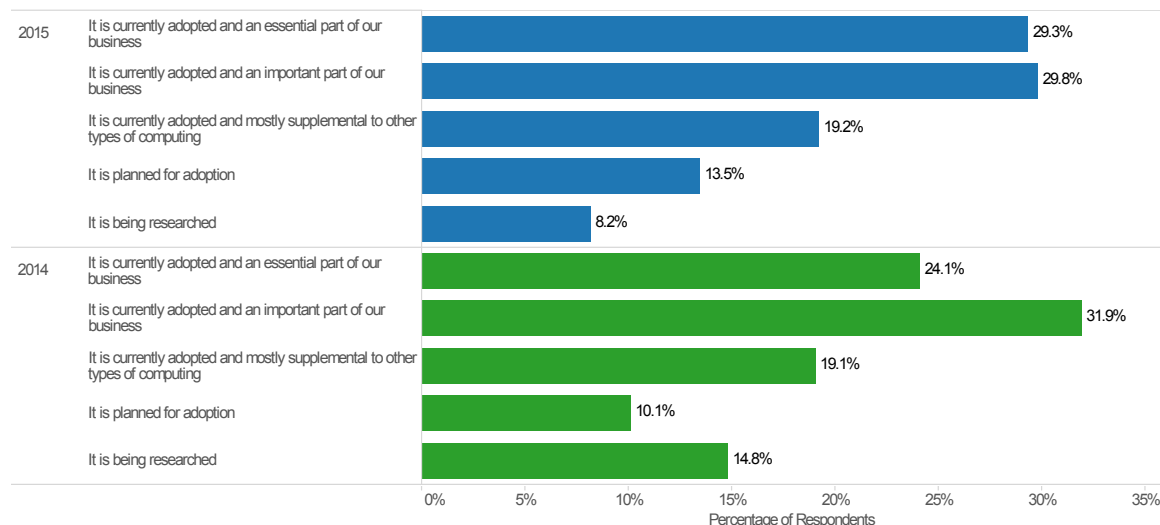
Additional issues surround the extent of data and information complexities that require special considerations for cloud-based implementations, including security of information in transit. As organizations create an initial infrastructure surrounding their analytics goals within a cloud environment, their strategies for secure data and analytics outputs will become more flexible and efficient. With more organizations leveraging cloud-based infrastructures for their business intelligence, there will be an expansion of project use and focus on broad cloud-based infrastructures. Organizations will be tasked with bringing more data together and identifying how to integrate both operational and analytical environments to ensure better application support and information access.

2.1. Cloud-based Strategy and Maturity

With more flexible cloud-based options within the marketplace, organizations are more apt to create formalized approaches. For organizations that embrace cloud-based approaches, there are a number of opportunities to expand their processing, storage, and distribution options beyond their on-premises data center. For those that do not adopt cloud-based strategies, there are fewer options.

As part of the 2015 EMA Cloud-Based Analytics and Business Intelligence study, survey panelists were asked to identify the depth of their cloud-based strategies for analytics and business intelligence. 29.8% of respondents indicated that they had adopted cloud-based strategies and those strategies were an important part (**currently adopted and important**) of their business. Another 29.3% of respondents indicated those strategies were **currently adopted and essential** to their businesses, placing 59.1% of the EMA panel into an extensive cloud-based strategy. This is an increase of over 3% from 2014 survey respondents, showing an increase in organizations' cloud-based maturity.

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The remaining 41% of EMA panel respondents were distributed into the **currently adopted and supplemental**, **planned for adoption**, and **being researched** categories. Between 2014 and 2015, organizations planning cloud analytics projects increased by over 3% and those researching projects dropped by 6.6%, accounting for the increase in the other areas.

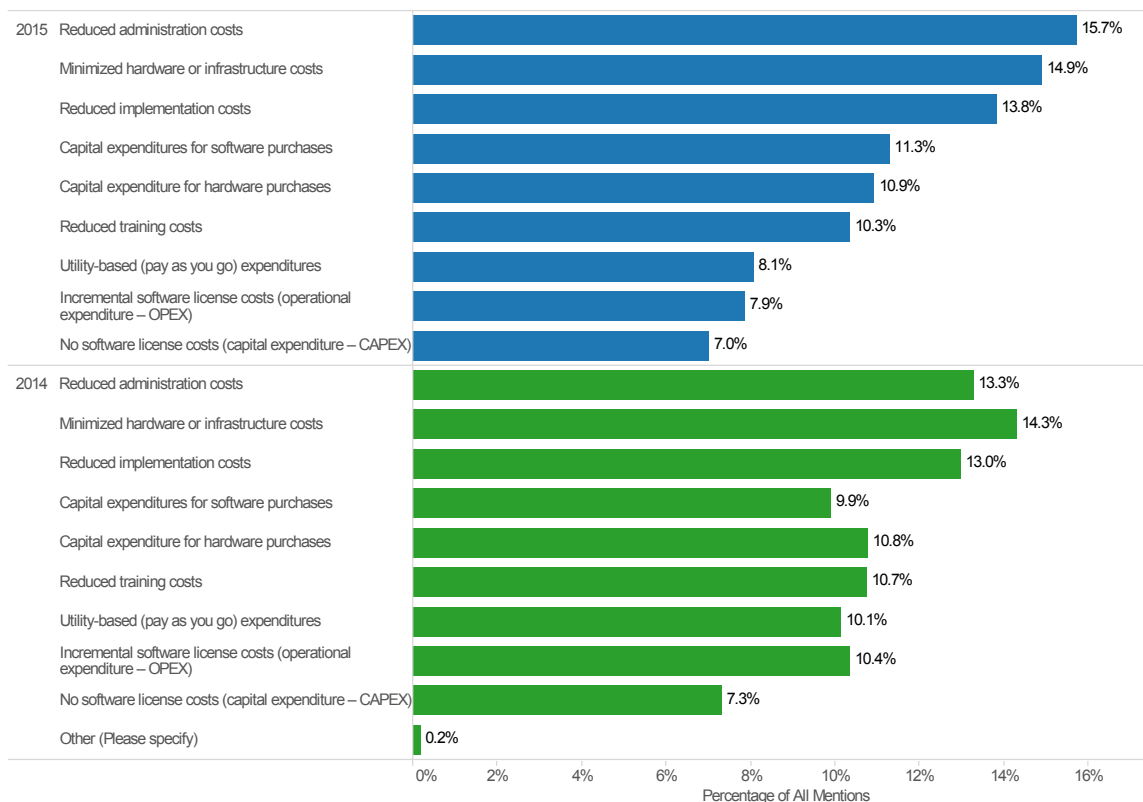
2.2. Capital Budgets and Operational Expense

Cloud-based implementations have always been considered as instrumental in lowering costs for organizations. Initially, cloud-based implementations had the advantage in terms of duration of platform provisioning. Instead of measuring the implementation of a platform in months, or as a best-case scenario, weeks, cloud-based implementations could be implemented in days, if not hours. Diminished time to implement reduced the overall cost of implementation by allowing organizations to execute initiatives in a relatively short amount of time.

Cloud-based platforms continued to provide this level of implementation speed and reduction of cost for procurement, implementation, and execution. However, cloud-based platforms are starting to evolve past simply providing a faster time to implementation, maturing into solutions that also provide a higher level of value in terms of the overall total cost of ownership (TCO).

When asked about **financial drivers** associated with cloud-based analytical and business intelligence platforms, the EMA survey panel indicated that **reduced administration costs** were their top financial consideration, up by over 2% from 2014's responses.

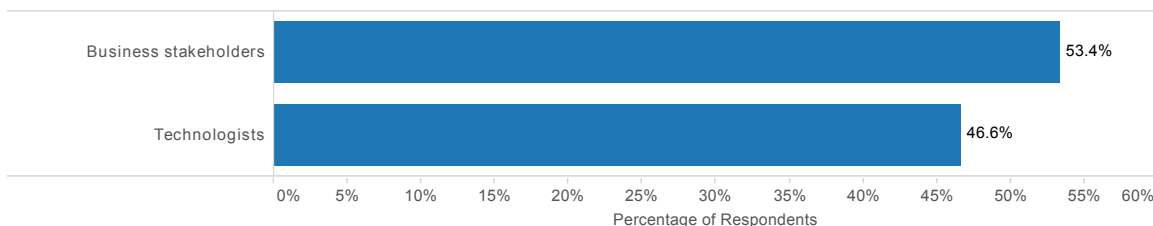
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The next two top drivers are **minimized hardware or infrastructure costs** and **reduced implementation costs**. Essentially, the top three financial drivers for organizations involve reducing overall expenses of the organization's analytics strategy and implementation. The next two most highly-rated areas relate to **capital expenditure for software and hardware purchases**, which shows that organizations are starting to prefer fixed costs when considering their analytics implementations.

2.3. Role and Department

EMA survey respondents were asked about their role in their organization as well as the department that they served. 53.4% of the respondents indicated that they are **business stakeholders**.

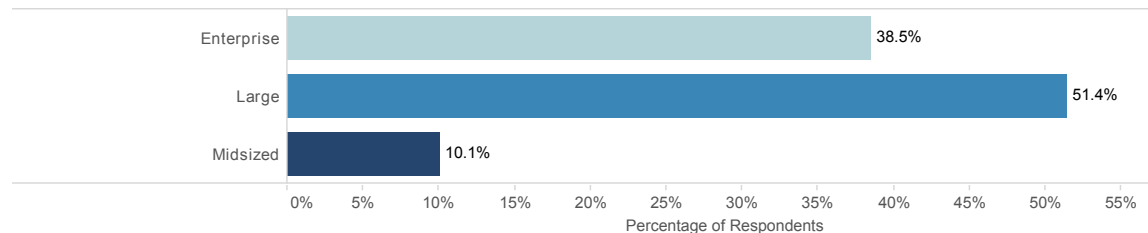


The remaining 46.6% of respondents represent **technologists** within the organization. A balance between business stakeholders and technologists is important to get a broad view of how organizations are applying cloud technologies, and the relative success or failure of an analytics or business intelligence strategy. Having a balance between roles ensures that both views are represented and that one side does not have more influence than the other.

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2.4. Company Size

The EMA survey examined companies across a range of sizes. Corporate headcount is distributed in the following manner:



Large companies with headcounts of 500 to 5000 employees represent 51.4% of the EMA panel. These organizations may benefit from the ability to provision technology at the speed of cloud-based solutions without distracting resources from business objectives. With over 5000 employees, **enterprises** (38.5%) have the resources to implement private clouds within their own data centers or utilize a range of technology solutions to take advantage of a hybrid approach. **Midsized** organizations (10.1%), with less than 500 in corporate headcount, are generally focused much more on business objectives and utilize a generalist staff for IT support. Midsized businesses may choose to take advantage of the increasing number of managed services and targeted business analytics and platform offerings to give them more robust capabilities without the need to develop an on-premises solution.

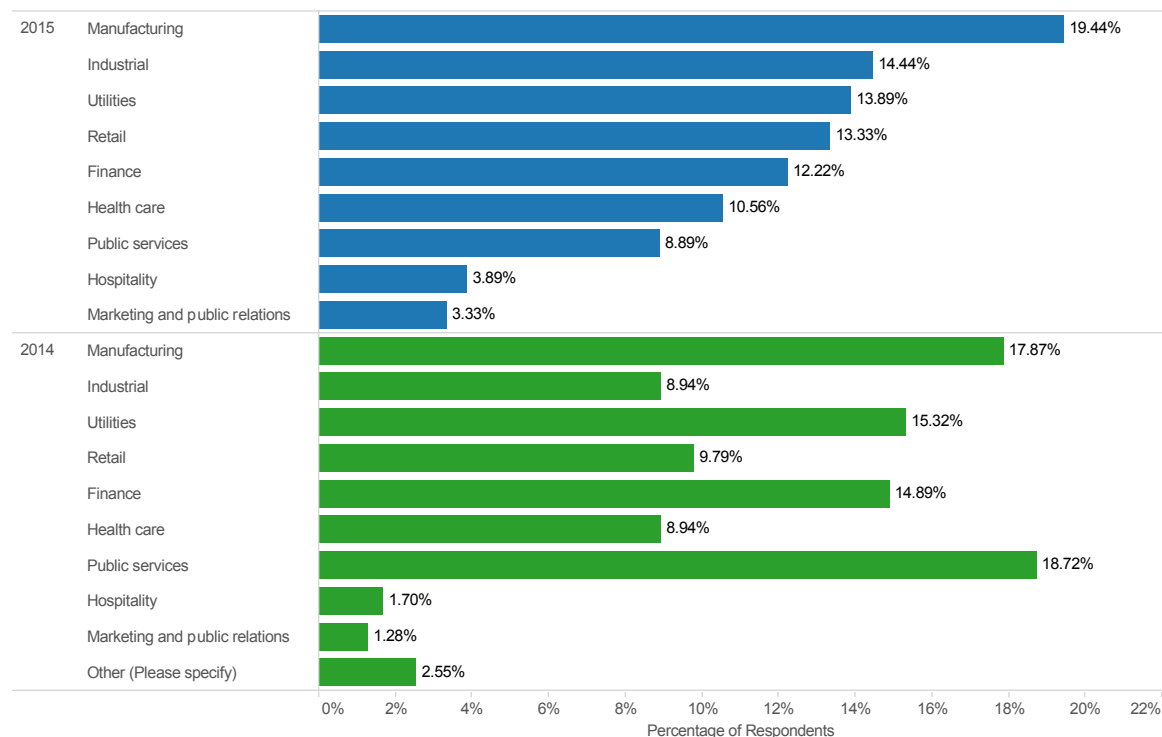
2.5. Primary Industry

EMA research into cloud-based initiatives also takes into consideration the various industries and industry segments of the respondents. Some industries are on the cutting edge of developments while others are still gaining traction. In this study, EMA grouped industries into the following designations:

- **Manufacturing** – All non-computer or networking-related manufacturing industries
- **Industrial** – Aerospace and defense manufacturing, oil and gas production and refining, chemical manufacturing, and transportation and logistics organizations like airlines, trucking, and rail
- **Utilities** – Telecommunications service providers, application, internet, and managed-network service providers, and energy production and distribution utilities
- **Retail** – End consumer retail and wholesale and distribution
- **Finance** – Finance, banking, and insurance
- **Health care** – Medical device and supply and pharmaceutical production
- **Public services** – Government, education, non-profit/not for profit, and legal
- **Hospitality** – Tourism, lodging, and events
- **Marketing and public relations** – Services organizations providing services to client organizations

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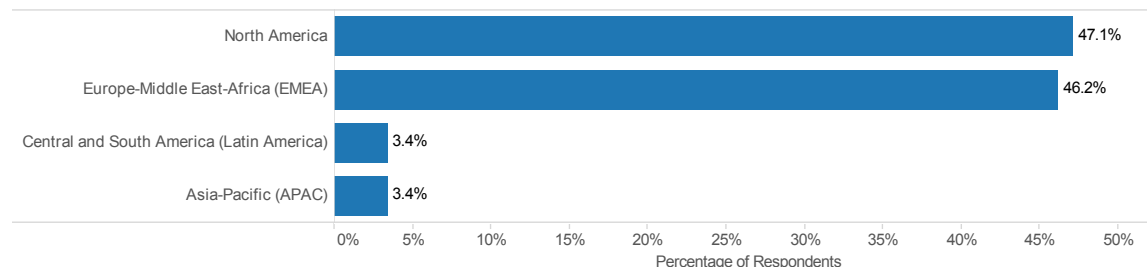
These **Industry Segments** are distributed as follows and changed over the last year:



The **manufacturing** (19.4%) industry segment is the most highly-represented industry within the study and increased by almost 1.5% from 2014. This increase identifies the maturity of the industry and identifies the continued importance of leveraging cloud for analytical access and data consolidation. The largest shift in respondents is within the **public services** (8.89%) industry, with a decrease of 9.8% from 2014. This change coincides with increases in **industrial** (14.44%), **retail** (13.33%), and **health care** (10.56%), showing cloud maturity in these areas. As these industries expand their cloud momentum, they can benefit from the scalable provisioning aspects of cloud implementations.

2.6. Corporate Headquarters Location

The location of the EMA panel respondents around the globe is represented by the following distribution:

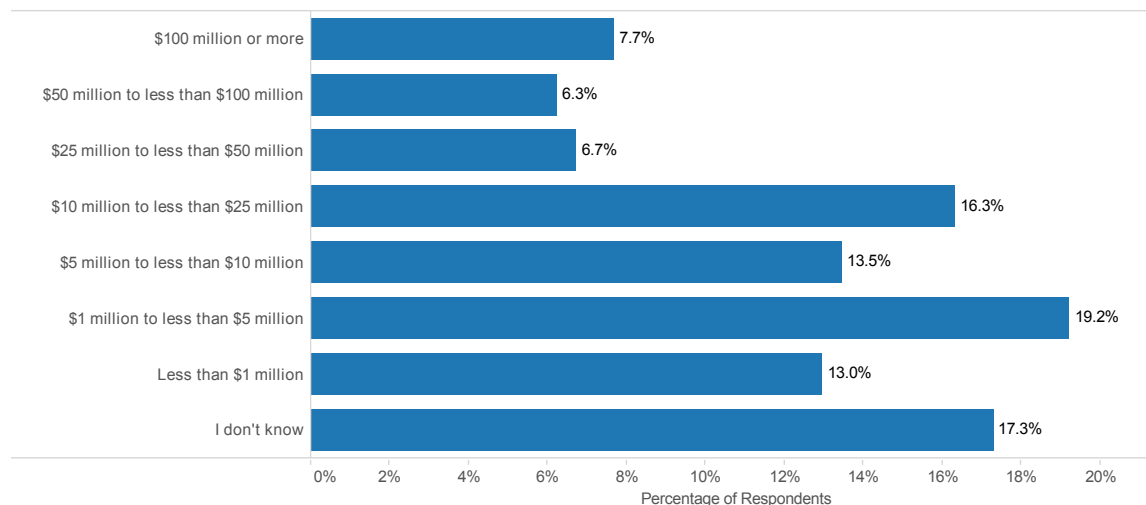


The **North America** and **EMEA** geographies have significant representation with 47.1% and 46.2% respectively. The **Central and South American** and **APAC** regions significantly lower representation in this survey panel with 3.4% each.

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2.7. Annual Information Technology Budget

To highlight the importance of the impact of budget on cloud-based analytical and business intelligence platforms, the EMA panel provided information about their **2015 Information Technology Budget**.



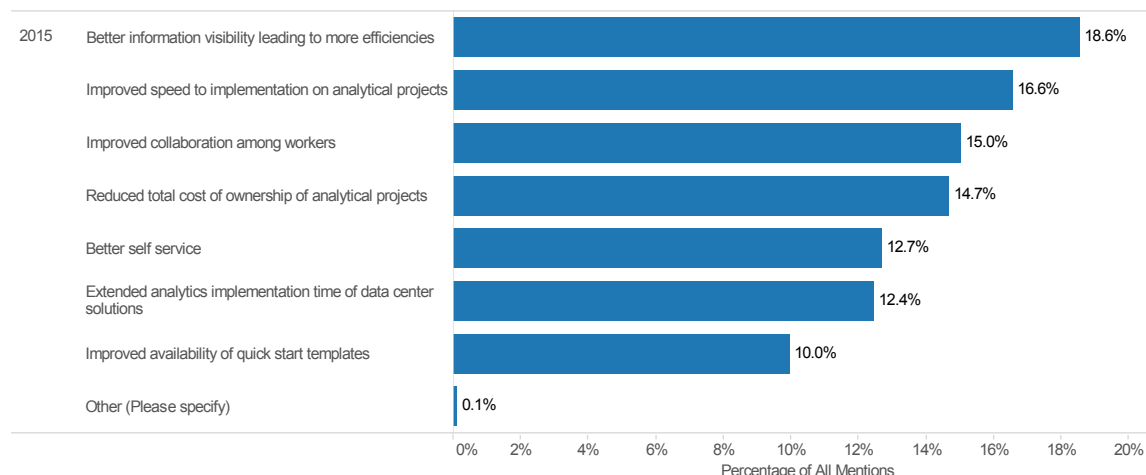
49% of the respondents indicated that their budgets falls within a band of \$1 million to \$25 million on an annual basis. This is down by 7% from 2014, while organizations spending less than \$1 million in IT budget allocation is up by 3%. As cloud maturity shifts, organizations may shift the amount of budget allocated to projects.

2.8. Drivers for Cloud Analytics Implementation

The drivers associated with business outcomes and technical concerns are part of the horizontal strategy associated with any organization's implementation of a cloud-based strategy. These drivers are the basis for how an organization aligns its budgetary and headcount resources associated with its cloud-based strategy.

2.8.1 Business Drivers

Drivers that impact competitive advantage and business outcomes are key pressure points for the business stakeholders and the line of business departments that contribute to the overall budgets associated with cloud-based analytical initiatives. EMA panel respondents were asked what overall **business drivers** are associated with their cloud-based strategies.

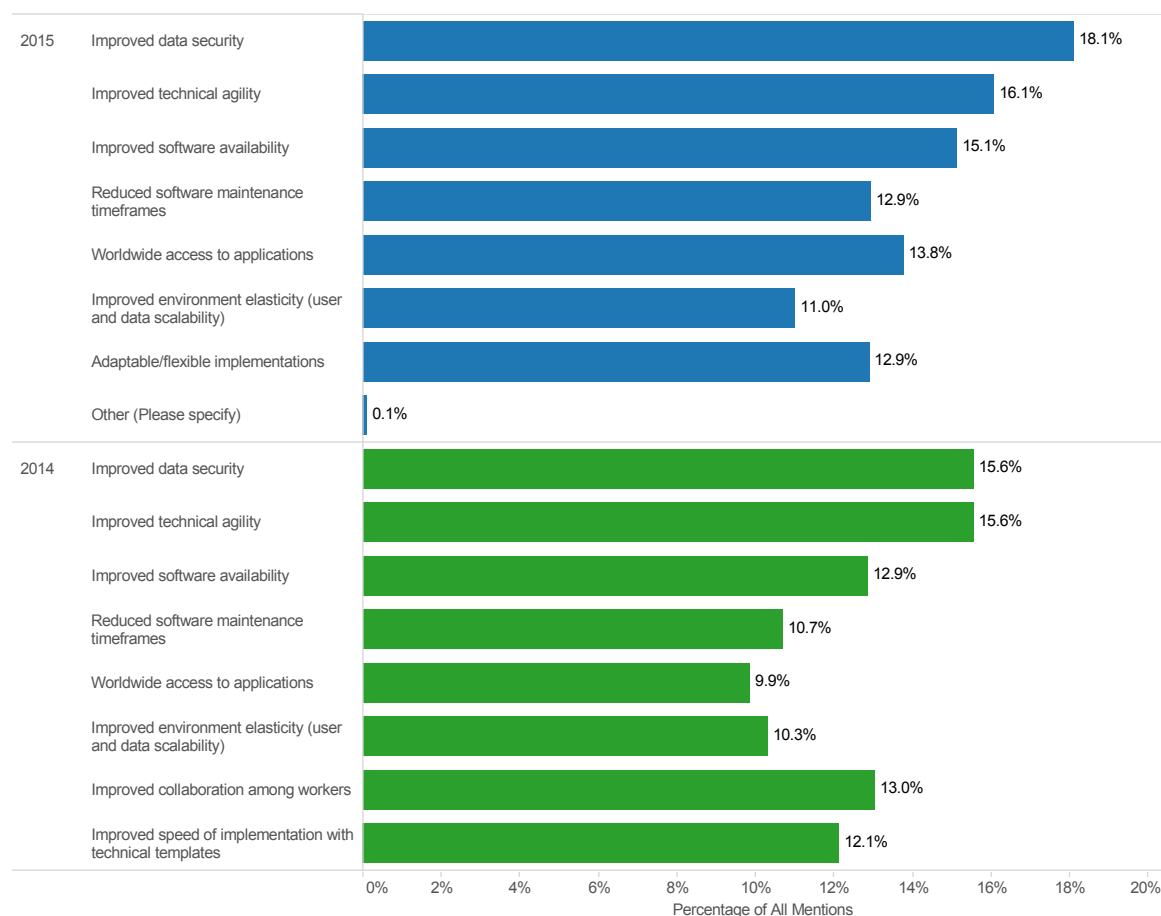


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The primary business driver is leveraging the cloud for **better information visibility leading to more efficiencies** (18.6%). The second most important driver for organizations is **improved speed to implementation on analytical projects** (16.6%), and the third top response is **improved collaboration among workers** (15.0%).

2.8.2. Technical Drivers

EMA panel respondents indicated their organization's overall **technical drivers** for cloud-based analytical strategies. The top technical driver was the concern surrounding improved security for data in cloud-based analytical environments with **improved data security** (18.1%), which increased 2.5% from 2014. Security remains the most important security driver as organizations continuously struggle with how to manage their security within increasingly diverse and complex data environments.



The next two **technical drivers** coincide with the **business drivers** associated with time-to-value for cloud-based analytical initiatives. **Improved technical agility** (16.1%) and **improved software availability** (15.1%) both indicate that technologists are looking for ways to advance their capabilities to improve time-to-value.

The three top technical drivers remain the same year over year, indicating that although projects and cloud environments are becoming more robust, general drivers remain similar and organizations still drive cloud projects based on their goal of achieving the time-to-value they require from these projects.

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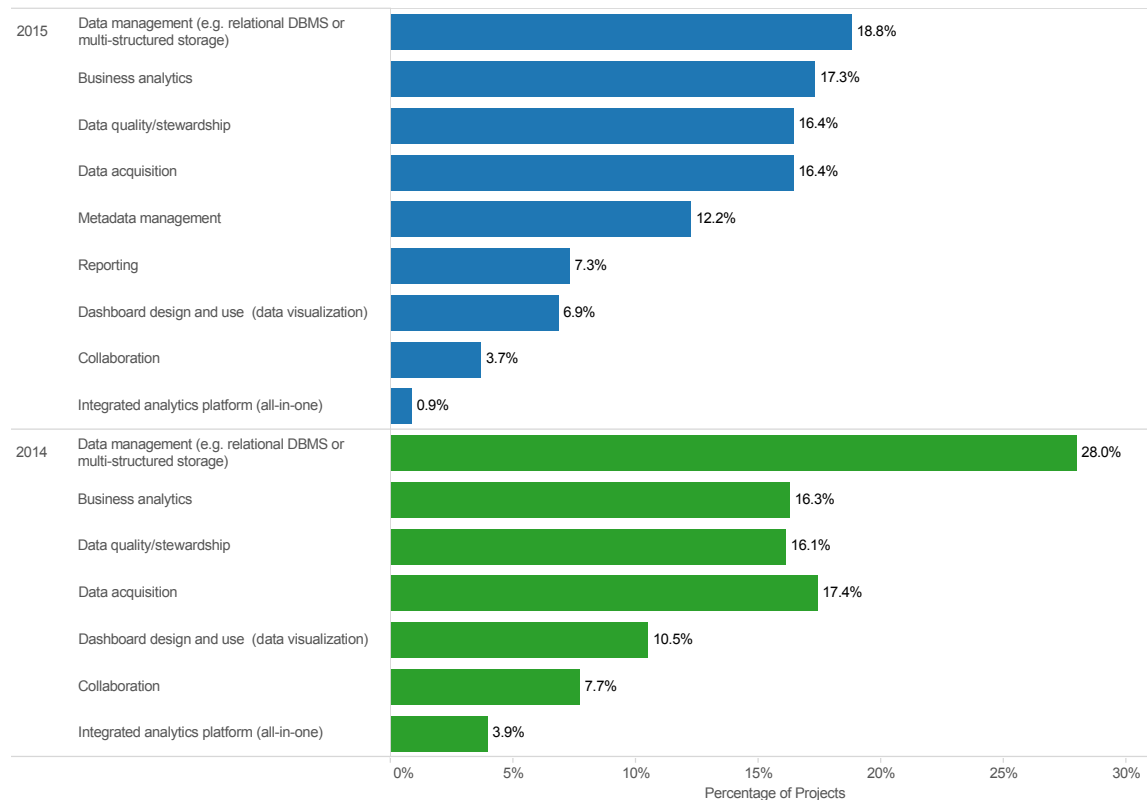
2.9. Main Cloud Component

Adoption of Cloud Analytics and the components that organizations select as part of their cloud strategy may differ according to the projects being developed and how cloud is deployed overall. Not all of the components of a particular analytical initiative or project are required to be cloud-based for consideration as a cloud-based project, but at least one or more components must be implemented on a cloud-based architecture.

EMA survey respondents were asked which of the following components are the primary cloud-based elements for their project. Some leveraged one or multiple components of cloud to create their cloud analytics environment.

- **Data acquisition** – Includes operational data capture and bulk data integration.
- **Data management** – Comprises data storage and maintenance platforms such as relational databases and NoSQL data stores that support data warehouses, data marts, and data lakes.
- **Metadata management/data quality/stewardship** – Consists of quality and metadata management models to support the improvement and categorization of data. Metadata refers to the data collected about the data stored, aiding in better overall information management.
- **Business analytics** – Incorporates development and implementation of analytical models such as multi-dimension query processing and descriptive and predictive analytics.
- **Data visualization** – Includes the display and reporting of the results of business analytical models via reports and static and dynamic dashboards.
- **Collaboration** – Involves the direction of action associated with the implementation of the concepts listed above: data acquisition, data management, data quality/stewardship, business analytics, and data visualization.
- **Integrated analytics platform** – The inclusion of all of the functional components listed above into a single platform.

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The most frequent choice for the respondents' analytical projects was a cloud-based **data management** (18.81%) platform, down from almost 28% the year before. In 2015, **metadata management** (12.24%) was added, which may compensate for the decrease in overall **data management**. Organizations are still leveraging cloud for their data management but their efforts diversify as their cloud environments become more mature. **Dashboard design and use** decreased almost 4% in 2015. With **reporting** (7.13%) introduced as a new category as well, organizations may be expanding their overall analytics deployments, as the total increase is by 4% as a total for both. With more organizations adopting cloud and expanding their number of projects, analytics becomes more of a business driver, as data consumers require ways to interact with their data in a flexible way.

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3. Methodology and Demographics

3.1. Research Methodology

EMA crafted the Cloud-based Analytics and Business Intelligence End User survey that is the basis for this report. The 2015 survey was based on previous 2014 and 2011 surveys that were designed and implemented in partnership between EMA and BARC. The 2015 survey was expanded upon and fully developed by EMA.

Before the survey was conducted, EMA provided report sponsors with a copy of the survey instrument. However, sponsors had no direct involvement in or influence on the survey creation, survey contents, survey execution, or any of the subsequent evaluation and analysis of the results for this report.

For this research, EMA invited pre-qualified business stakeholders and information technology (IT) professionals to complete an extensive web-based survey. Two hundred and eight business and technology professionals responded to an invitation to provide their insights on cloud-based analytics and business intelligence strategies and implementation practices. To offer a balanced enterprise view of the subject, the respondent pool was also restricted. Business stakeholders represented 53% of respondents. Technologists accounted for 47% of the respondents. The 2015 survey instrument was executed in November 2015.

These respondents were further qualified based on their responses to the following questions:

- What is your primary role in the usage and/or management of cloud-based analytics and business intelligence applications/technology within your organization?
- Which of the following best describes your company's primary industry?
- How would you describe the extent to which cloud-based analytics and business intelligence initiatives have been adopted within your business/organization?
- What is your relation to cloud-based analytics and business intelligence applications/products currently being used within your organization?
- At what phase of implementation are your business area /organization's cloud-based analytics and business intelligence initiative's project(s)?

Respondents who failed to qualify with these questions were rejected. As a result, all respondents (in addition to being independently pre-qualified through the initial invitation process) self-identified as being active participants with a working knowledge of current operational and analytical data management practices within their company that is presently researching, planning, or implementing cloud-based strategies and technologies.

4. Author



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