IoT Analytics:

Four Key Essentials and Four Target Industries

ABERDEEN GROUP | IBM

Analysts and IT personnel across all industries seek technology to better engage and manage data generated by the Internet of Things (IoT). Organizations are hungry for the ability to generate insight from the constant stream of information. Technology buyers should carefully consider how to invest to optimize the opportunities for leveraging IoT data in their specific industry.

In this ebook, we'll dive into 4 different industries and 4 different elements that impact IoT. All 8 of these elements are important to keep in mind as IoT expands and analytical companies manage to keep up.

Four Key Elements and Target Audiences

Analytics and Data Management at the Edge
/ Telecommunications

Streaming Data Integration and Analytics
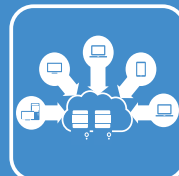/ Energy & Utilities

Flexible Data Architecture
/ Government

Hadoop
/ Healthcare

In an Internet of Things (IoT) environment, nearly every object, device, and consumer good is connected to networks and / or the public internet. These "things" or smart objects can be individually identified, tracked, and managed, and can be connected to networks through a variety of methods.

3 | Analytics and Data Management at the Edge
Telecommunications

Top performers demonstrate that data management and analysis are moving from the central data repository towards the edge of the network. Aberdeen has found that by adding intelligence to the edge, leading companies (Leaders) maximize the intake of information and accelerate data processing. Automated data capture and indexing ensure that all data sources feed data into an analytical engine and enable correlations between streaming IoT data and historical data.

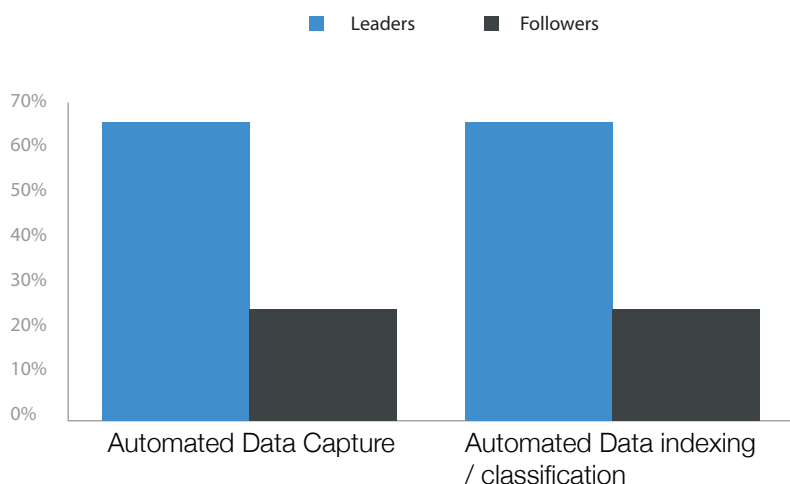## Leaders are the top 35% of performers across the following metrics:

% of users satisfied with the quality of data-driven decisions

frequency of access to timely information

% of users satisfied with speed of information delivery

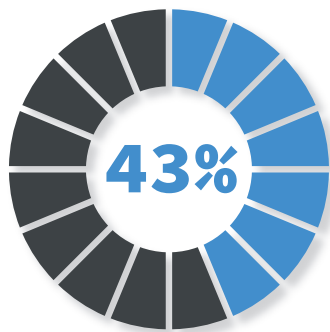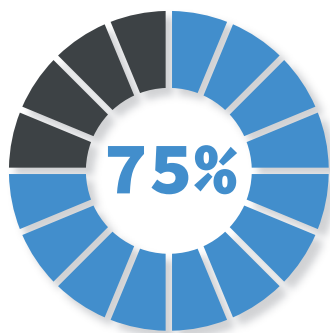organic revenue growth year-over-year

Edge Capabilities

Leaders   Followers

Source: Aberdeen Group, February 2015

Telecommunications providers manage and analyze data at the edge to most effectively engage the countless data sources available to them. Intelligent databases help analysts engage data from smart grids and connected devices close to the source. Working with data at the edge enables decision makers to act at the local level before IoT data is sent to a central database.

43% of telecommunications companies cited poor decisions based on incomplete data as the top pressure driving analytical initiatives

75% of highly analytical telecommunications companies improved customer response time over the past year

n=110 Source: Aberdeen Group, February 2015

Streaming Data Integration and Analytics
Energy & Utilities

Leaders invest in the ability to engage real-time IoT data. Such solutions give users the ability to analyze data in the stream and at the gateway level. Streaming integration enables analysts to correlate information as soon it arrives from thousands of sources. The most successful organizations invest to get up-to-the-second IoT data to the right people at the right time.

Leaders are **61% more likely** than Followers to have streaming data integration and analytics

Organizations with streaming data integration and analytics are **34% more likely** than All Others to have improved time-to-decision over the past year

Aberdeen defines the decision window as the period of time when information is valuable for a choice at hand.

Energy & Utility companies face enormous amounts of fast-moving information generated by infrastructure and customers. For operational decisions, these companies need to know what is happening right now. Despite this need, Energy & Utility companies lag behind other industries in adoption of real-time analytical capabilities and their performance suffers for it.

Energy & Utility companies are **25% less likely** than all other organizations to have streaming analytics

Just **51% of Energy & Utility companies** obtain information within the decision window

6 Flexible Data Architecture
Government

There is no single IoT solution that will work for every organization. To fully leverage IoT data, organizations should embrace flexible architecture that incorporates current systems, optimized IoT solutions, cloud databases, and backend analytical platforms. Such a hybrid approach can combine on-premise, off-premise, public, and private models. Flexible data architecture will also enable organizations to handle non-traditional data types such as geospatial and unstructured data.

Leaders are **88%** more likely than Followers to have multiple systems of records that share data across multiple business units and divisions

Leaders are **68%** more likely than Followers to analyze unstructured data

Government agencies must make legacy systems work alongside newer databases. They need IoT analytics to recognize opportunities to lower costs and perform their duties more efficiently. A hybrid approach enables data workers to harness all available IoT data and generate insights that drive better public service.

Government agencies cited aging infrastructure as a top analytical challenge

52% of government agencies are using IoT data to identify inefficiencies and lower operational costs
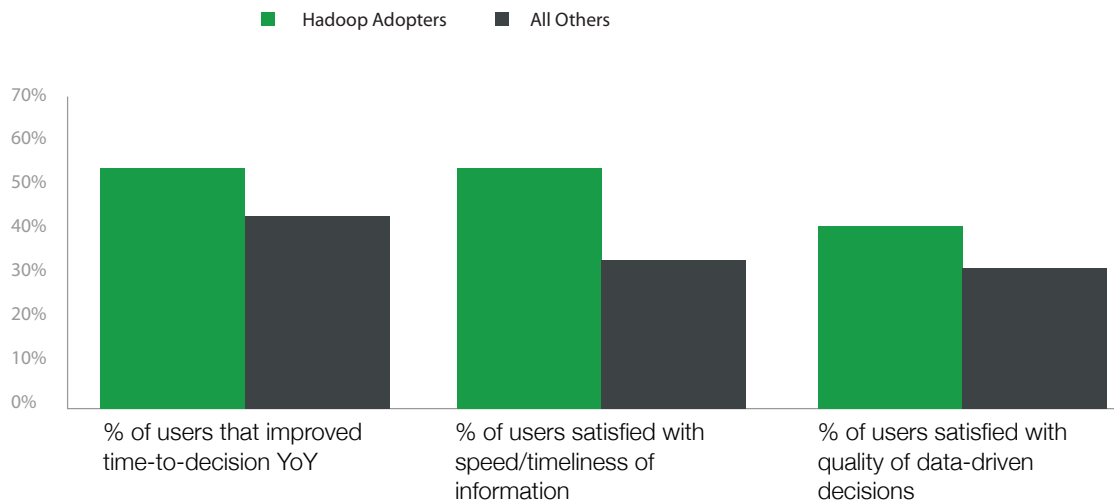
60% of government agencies have real-time data integration tools that work across multiple systems and databases

Hadoop
Healthcare

Many organizations are meeting the demand of IoT analytics with Hadoop. Hadoop accelerates complex analysis, enabling IoT inquiries that were previously too ambitious or time consuming. This enables decision makers to make more confident calls within shorter windows of time.

The Impact of Hadoop

■ Hadoop Adopters   ■ All Others

Source: Aberdeen Group, February 2015

The improvements driven by Hadoop are having a profound impact on healthcare. Medical professionals don't have time to wait for data. They need data processing and analytics to meet the demands of daily care and facilitate fast decisions. Distributed computing enables healthcare analysts to quickly derive insight from massive amounts of data generated by the IoT in healthcare environments.

The Internet of Things will only continue to grow larger and faster.

Analytical organizations need technologies to help them capitalize on the opportunities offered by the wealth of IoT data. As valuable information continues to be constantly generated, Hadoop, flexible data architecture, streaming integration and analytics, and data engagement at the edge will optimize IoT analytics across all industries.