WHITE PAPER

INTELLIGENT BUSINESS STRATEGIES

Improving Access to Data for Successful Business Intelligence

Part 1: Meeting Today's Business Requirements in an Increasingly Complex Environment

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INTRODUCTION

Companies are becoming highly customer focussed, with analytics and access to information being seen as strategically important

C-suite executives now regard analytics and access to information as highest priority

Better access to information is the single most important measure in making business intelligence a success

A key factor in successful business intelligence (BI) implementations is the ability to easily access and integrate data. Several recent studies support this, including an October 2013 survey[1] of more than four thousand C-suite executives. The results show that customers are now rated as the most influential people in the business, after the C-suite executives themselves. It is not surprising therefore that access to information to improve customer experience and to provide customer insight is now in high demand. In fact, 87% of Chief Marketing Officers (CMOs) view integration of cross-channel touch point information and 83% view analytics to capture customer insights as their most important initiatives over the next 3 to 5 years. 94% of CMOs see *advanced* analytics as the most important technology to help realise their goals around customer insights. Similarly Chief Financial Officers (CFOs) cited the biggest gap (of 58%) where they need to do a better job was in the ability to access and integrate information across the enterprise. In addition, 84% of Chief Information Officers (CIOs) rated Business Analytics and Optimization as their joint highest priority. The results from a second survey[2] reinforce this and show that better access to information is the single most important measure in making business intelligence a success.

This series of three white papers titled "Improving Access to Data for Successful Business Intelligence," looks at the challenges that companies are facing with their data, including:

- the increasing demand for more data from more sources to deepen insight
- the business expectation to deliver BI quickly in an increasingly agile way, irrespective of data complexity

In Part 2, we will also look at the business requirements driving demand for deeper insights and at the changing analytical landscape, which now consists of multiple analytical platforms beyond that of a just a data warehouse. We will also look at the growth in adoption of self-service BI tools in use in business areas and at key requirements for maintaining good data access in an increasingly complex analytical environment. In Part 3 we will look at how one vendor, Progress Software, is stepping up to the challenge of simplifying access to data in order help organisations be successful with their business intelligence initiatives.

[1] The Customer-activated Enterprise – Insights from the Global C-Suite Study, IBM Institute of Business Value, October 2013

[2] Successful Business Intelligence 2nd Edition, Cindi Howson, Pg. 80 Fig 4.3

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TODAY'S INCREASINGLY COMPLEX DISTRIBUTED DATA LANDSCAPE

The number of data stores in most organisations is steadily growing

In many companies the data landscape is becoming increasingly more complex, with the number of data stores steadily growing. In the area of transaction processing, it is still the case that multiple instances of applications can exist across an organisation perhaps to support processes and business functions in different geographies and different lines of business. Perhaps the most notable change in transaction processing is that decision that many organisations are beginning to run some of these applications in the cloud, which of course means that corporate data now exists both inside and outside the firewall.

Transaction data and customer data now exist in the cloud

Multiple data warehouses and analytical appliances exist

Big data has brought Hadoop and NoSQL databases into the enterprise

In analytical environments, most companies have more than one data warehouse today and are now introducing analytical relational database appliances to support new analytical workloads. This is causing 'islands' of overlapping data to exist across multiple analytical systems. In addition, big data is now in the enterprise adding platforms such as Apache Hadoop and NoSQL databases are also being incorporated into the data landscape. Also, analytics is no longer about purely structured data. It is also about unstructured data and with that comes demand for data from external sources and marketplaces for specific types of big data analysis.

The data landscape is becoming increasingly complex and data is becoming more and more distributed

Within the enterprise, unstructured data is not only found in Hadoop; it also exists in multiple places including enterprise content management systems, email systems, CRM systems and in file stores right across the enterprise.

Connectivity to data is becoming critical

Distribution of data will continue to increase

Looking at this evolution and increasingly complex setup, there is no doubt that data is becoming more distributed. It exists inside and outside the enterprise in many different systems, cloud providers, appliances and other data stores. It also exists in many different formats. This increased complexity makes it harder to know where data is located and how to access it. Connectivity to data is becoming more complex and more critical in an increasing distributed data landscape. Looking forward, this trend is set to continue as more data sources continue to emerge. A good example is the 'internet of things'. Smart products and sensor networks will trigger a tsunami of data and a quantum leap in the number of data sources that businesses will need to access to stay competitive.

THE AGILE BI EXPECTATION

Business expectation is that BI can be produced quickly because of new, more agile tools

Despite the trend toward increasingly distributed data and more data sources, there is an expectation from business that BI must be produced and delivered in a more rapid and agile way than ever before. Business organizations demand rapid development, along with flexibility to accommodate change requests and to have those new requirements met easily. The emergence of automated data warehouse development software together with self-service BI tools has fuelled much of this expectation. Agile data warehouse automation tools allow developers to use metadata to automate the building of data warehousing systems by generating physical data models, data cleansing and data integration jobs. Self-service BI tools with in-memory data and data compression provide

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business users with the ability to rapidly interact with these tools changing filters, dimensions measures and visualisations at the speed of thought.

Opposing Forces – Business Agility Versus Complexity of Data Access

This expectation exists despite the fact that data distribution is on the increase

Increasingly distributed data in a variety of formats combined with the demand for agile development means that when visualising data, business users increasingly need access to multiple data sources—including data inside the enterprise, data outside the enterprise in one or more clouds and big data from a variety of sources.

Business users therefore need access to multiple data sources to analyse and visualise data

Given that this is the case, what business requirements are driving the need for business analysts to need to do this? Let's take a look.

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TODAY'S NEW BUSINESS REQUIREMENTS FOR IMPROVED INFORMATION AND COMPETITIVE ADVANTAGE

The need to retain customers, reduce risk, improve operational efficiency and create new products are the business drivers creating the demand for better information

Since the recent global economic downturn, many C-level executives around the world have responded to tough challenges by implementing initiatives that transform their companies into leaner, more efficient and more intelligent businesses.

To achieve this, several key requirements have emerged, including how to:

- Retain customers, their loyalty, and grow the customer base
- Manage and reduce risk
- Improve efficiency and effectiveness of operations
- Identify new products and business models

IMPROVE THE CUSTOMER EXPERIENCE

The need for deeper customer insight is driving demand for more customer data from multiple data sources

Today many companies are still organised around products or lines of business as opposed to being organised around their customers. As a result, customer data is highly distributed across many systems, including product-oriented or line of business-oriented operational systems and data warehouses. In addition, many companies have deployed Software as a Service (SaaS)-based applications on the cloud such as Salesforce.com where customer data may also reside. However, the demand to gain a 360-degree understanding of customers has provided incentive for many companies to evolve their approach and at the same time, seek access to big data sources such as online clickstream data and social media data. They also want to be able to view sequentially all inbound and outbound interactions with customers to try to understand and improve the customer experience across all channels. Quality of service is another high-priority area. As a result, connectivity to all these sources becomes essential to obtaining rich customer insight.

This includes data in the cloud and new big data sources

BETTER RISK MANAGEMENT

Access to big data is also in demand to help reduce risk

Risk management is another business requirement driving the need for access to more data. For example, oil and gas companies are deploying sensors to instrument oil and gas wells, pipelines and drilling equipment to minimise risk to health and safety, the environment, and to avoid damage their brand by preventing disasters. Banks want to manage credit risk of their customers across all loan products and have risk-adjusted customer relationship pricing. Insurance companies want to minimise risk of claims from drivers by deploying "smart boxes" full of sensors in younger customers' vehicles to monitor how they drive to reduce claims and improve loss ratios. Similarly, insurance companies that get all their business from brokers now want to access and analyse unstructured text in the broker documents that come into underwriters for them to make a decision about whether to underwrite the risks. By doing this, they can pull

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insights from the additional unstructured data that can be combined with claims data to highlight new risk factors for use in risk models to improve underwriting decisions and reduce the number of property claims. All of this requires more data from multiple data sources.

STREAMLINE BUSINESS OPERATIONS

Sensor networks are being deployed to gain insight into operations

This helps increase speed of process execution and reduce cost

To reduce cost and improve efficiency, businesses must be able to monitor and measure their end-to-end operations. For example, manufacturing companies are deploying sensors in production lines to gain insight into slow and costly activities in production. Logistics firms and retailers are deploying sensors to monitor the flow of goods in supply and distribution chains. Cities are using GPS sensors to monitor and optimise traffic flows. To achieve these cost reductions and efficiency improvements mean that big data must be combined with existing on-premise and cloud data, i.e. structured and multi-structured data from multiple sources is now needed.

DEVELOP NEW PRODUCTS AND BUSINESS MODELS

More data from multiple data sources is needed to identify new markets and the need for new products

The ability to add new data sources means that new insights are uncovered that could easily show gaps in the market and provide opportunities to offer new products and develop new business models, all leading to business growth. For example, telecommunications firms could use GPS data and data records to determine where people are located, where they have come from, and what content they look at when attending specific events. This information could lead to new products and services to offer customers based on where they are. In addition, this kind of data could help create a completely new business by selling GPS data to other organisations such as retailers to conduct targeted flash advertising based on GPS location to attract customers to buy a product or come into a store. Again it is the combining of data from multiple data sources, both internal and external, that empowers businesses to innovate in this manner.

These requirements clearly demonstrate that businesses now regard deeper insight as strategically important to retaining customers, improving customer experiences and driving overall growth. At the same time, more data is needed to reduce risk and operational costs. More data is also needed to open up new opportunity in the form of new products and business models. All of this is about using data to drive better profit margins and new business growth while reducing risk and remaining compliant with regulations and legislation.

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CONCLUSION

Improved access to data is now needed to retain and grow the customer base

Access to multiple data sources inside and outside the enterprise is also needed as data becomes increasingly more distributed

The increasingly complex data landscape, the demand for agile business intelligence backed by new high-priority business drivers is driving the demand for improved access to data from inside the enterprise, outside the enterprise on the cloud, and from big data sources. As the number of data sources continues to climb, data scientists, business analysts and decision makers all want the ability quickly and easily access the data they need to speed up the production of highly competitive actionable business insights that drive better business and financial performance.

In Part 2 in this series, we will look at how these demands are changing the analytical landscape, the growth in self-service BI tools, and the requirements for improved data access in an analytical environment.

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About Intelligent Business Strategies

Intelligent Business Strategies is a research and consulting company whose goal is to help companies understand and exploit new developments in business intelligence, analytical processing, data management and enterprise business integration. Together, these technologies help an organisation become an *intelligent business*.

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