Moving from Data to Intelligence to Business Transformation

Recommendations for the Transport and Logistics Industry

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Answers You Can Trust

The business of transportation and logistics is to keep parts, parcels, people, and even pets, on the move, sometimes on journeys that snake around the world and require multiple transportation modes, including air, rail, sea and road. The industry manages this quite efficiently and effectively.

However, there is a common frustration shared by many CEOs and managers in the industry – "When I ask four different people the same question, I get at least four different answers". This is not conducive for addressing key business issues facing the industry, such as, knowing exactly what it costs to deliver, which services are most profitable, or which customers are unhappy and likely to switch to a competitor.

Challenges in "Delivering" Business Intelligence

Business Intelligence (BI) has changed significantly over the last decade. Previously, BI was conducted by an elite group of mathematicians or statisticians, based at headquarters. They would look at company data and make strategic recommendations and decisions, once or twice per year.

> "Business intelligence (BI) is a set of theories, methodologies, architectures, and technologies that transform raw data into meaningful and useful information for business analysis purposes. BI can handle enormous amounts of unstructured data to help identify, develop and otherwise create new strategic business opportunities. BI allows for the easy interpretation of volumes of data. Identifying new opportunities and implementing an effective strategy can provide a competitive market advantage and long-term stability."
>
> Source: Rud, Olivia (2009). Business Intelligence Success Factors: Tools for Aligning Your Business in the Global Economy.


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However, BI has had to become more agile, to keep pace with business. There is power in enabling users in many parts of the organisation, to query the data to get the answers they need in order to make decisions in real-time, whether that is thousands or millions of times every day.

It also means examining all the data at hand, to ensure answers are consistent and accurate, while leveraging data sources not available or considered in the past. Data can be as varied as contracts, emails, hand-written notes by maintenance technicians documenting engine failure, free-flow text fields completed by customer service agents dealing with irate customers, to data from sensors built in to engines.

There is absolute gold in integrating financial data, operational data, commercial data, and other company data, as they provide a complete and accurate view of the business today.

Industry Use Cases for Data-Driven Business Intelligence

Here are a few examples taken from Teradata's customers that demonstrate how the transportation and logistics industry can solve current business issues using today's BI methodology.

The Customer

Major manufacturer / transportation company

The Business Issue

How to minimise service disruption by predicting mechanical, electrical and other failures.

The BI-Led Solution

With the technology available several years ago, this would have been an impossible challenge. There would be a short window within which to one – get the data, two – integrate the data, three – analyze the data, and four – deliver the results. By analysing all the available data sources, including sensor data, hand-written maintenance logs, and journey data, the company was able to predict failures anywhere from six hours to six days prior to the failure happening. This enabled the company to pro-actively fix mechanical problems, and put in place contingencies to ensure that shipments were delivered on time.

The Customer

Global transportation company

The Business Issue

How to accurately predict customer churn. The company had an existing database whose accuracy had been called into question. The company had to trust that their account managers and customers services would know when customers were not happy.

The BI-Led Solution

The company looked into the data for a combination of scenarios or churn "paths", such as customers who always paid their invoices in thirty-five days or less, but who were now paying later; customers who were calling customer service more often and for longer periods of time; customers who asked for more waivers; or who had changed the services they bought. By integrating their data and running analytics on that data for all these scenarios, the company was able to better predict the customers most likely to churn and take action to prevent the loss of business.

The Customer

DHL

The Business Issue

How to measure margins and develop better products. The company wanted to be surgical about the improvements that they could make to the products they offered to customers.

The BI-Led Solution

The key to this drive was to understand the precise cost of delivering the products and services offered to customers and whether this was a viable/profitable revenue stream for the company. By combining event data with revenue and cost data from financial systems and utilising a powerful allocation engine, the company was able to accurately calculate the amount of money made on each package, down to the item level. This granularity enabled the company to identify areas where profitability was down and take action – precisely revising pricing to reflect costs or changing the process to reduce costs.

Putting the 'Business' in Intelligence

It is relatively easy to stand at the end of a loading dock, watch the transaction happen, and write requirements

for a transactional system. It is another thing entirely to uncover the requirements for the data, how the data could be analysed, and what other data sources should be considered to answer specific business questions.

Five of the top ten challenges around big data[1] are directly related to the business, not IT. They include deciding the right project to get started with, and addressing the deficiencies in skills or staff within the organisation.

In most organisations there is a fundamental difference in the way that the business and IT might perceive the approach to BI.

Business intelligence and big data require a different approach, different interactions, processes, and even tools. More than a third of companies[2] embarking on this journey are helped by professional services, bringing expertise and best practice from other industries and organisations to bear.

Four Steps to Getting Started on the Business Transformation Journey

Get the data. Play with the data. Explore the data. Leverage your data!

1. Have a Strategy for Your Data

All of your data. Machine data? RFID? Sensors? That new scanner or smart phone is a wealth of data. A company that is expanding, acquiring, and global, has very different needs compared to a company happy to stay in their market and focused on cost reduction.

2. Wants vs. Needs

100 years ago, Henry Ford said, "If I had asked the people what they wanted, they would've said faster horses". And that is the challenge with BI today. It is just different. Business people can generally tell you what they want, but struggle to know or communicate

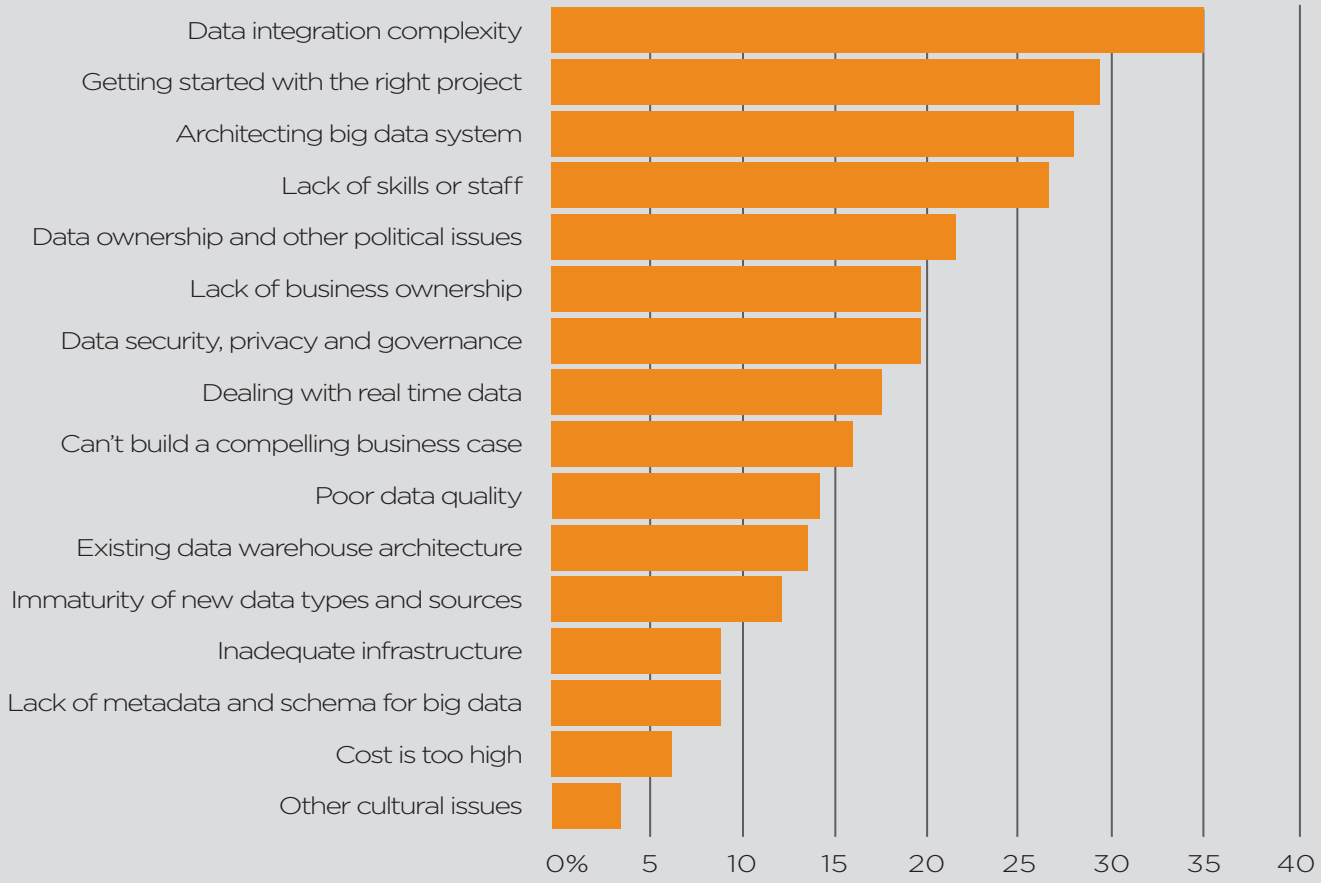

Figure 1: Big Data Challenges

Source: TDWI Predictive Analytics study, 2013

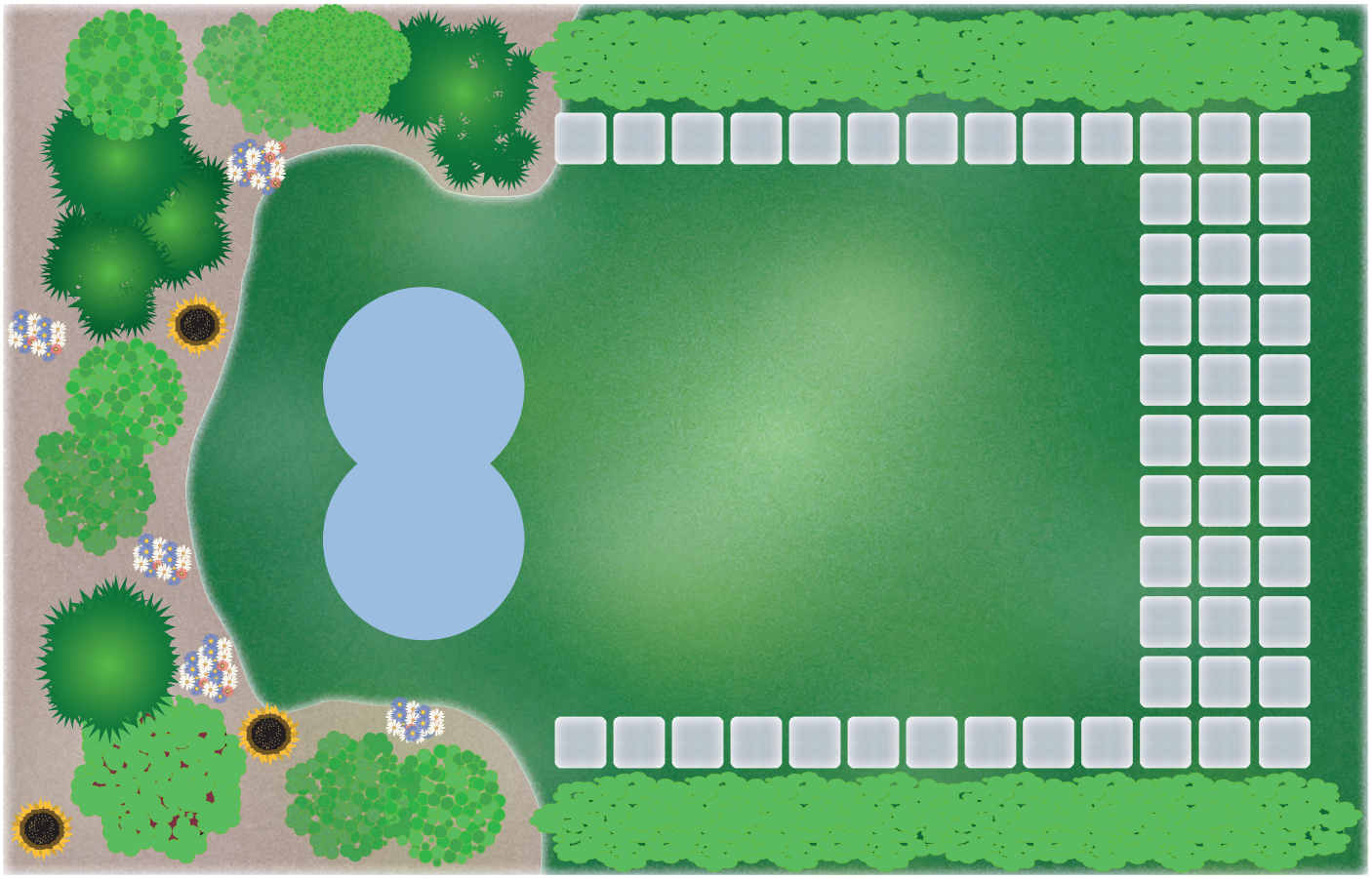

Figure 2: Designing a Data Model is Much Like Planning a Garden Re-Design

The Difference in Approaches to Business Intelligence

Business User	IT
Needs answers to questions, that might lead on to other questions	Needs to understand requirements in order to provision IT systems, services and personnel
Wants to apply a process of discovery to analysing the data	Wants to understand the endpoint in order to scope the project and timescales
Expects timely turnaround on reports to fuel agile business	Expects to deliver reports based on agreed turnaround times

what they need. To be successful, Business and IT need to collaborate, spar a little bit and figure out what's possible in terms of objectives, analysis, and actions to drive specific results.

3. Build a Roadmap Tied to Business Value

Look beyond answering one question with your data, even if it is the question most pressing to your company. What other questions could this data be used to answer? To extract the most value from your data, you want to be able to use it to deliver insights for many other parts of the business.

4. Buy a Data Model

Think of a data model as a garden plan. The cost of landscaping and refurbishing the entire garden in one go, is likely to be burdensome. By starting small, perhaps re-doing the decking or re-planting some trees, while keeping in mind where the pool would go in five years time, the cost becomes more manageable. This is the equivalent of a logical data model – a plan for your data.

Companies will not build this infrastructure overnight. Rather, this should be seen as a process, and data sources should be modelled so that the very same data can be used to answer many different questions.

A New Outlook for the Industry

Reports, run once or twice are year, do not provide the depth of BI that the transportation, logistics and

supply chain industry need in order to keep the moving parts of the business moving at maximum efficiency. By adopting a new approach to BI that incorporates new data sources and new analytical methodologies, the industry can better understand the things that mean the most to their customers. They can prioritise and manage valuable assets more efficiently and understand cost and profitability to make decisions on capital investments or product improvements quickly.

Endnotes

1. Predictive Analytics Study, TDWI, 2013
2. Global Big Data Revenue Segment share, Statista, 2013

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