

Big Data—Hot Air or Hot Topic?

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In August 2014, the ISACA® London (UK) Chapter organised an event in collaboration with PricewaterhouseCoopers (PwC) in London. The topic of the event was big data and concerns about the changes that this concept may bring to organisations. During the event, there were several questions and table discussions for the audience about the topic. This article summarizes the material presented during the event, the answers the audience provided to survey questions distributed during the session, and the key thoughts and topics covered during the table discussions.

There are many different definitions of the term 'big data', and concerns about whether it will necessitate significant changes in business operations in the short term. However, it is broadly recognised that, as technology becomes cheaper and more user friendly, there are more data than there used to be, and those data get more media attention than ever before.

Advantages

One of the key advantages of big data is that it can provide new insights that may lead to making more informed decisions. This is not applicable just for organisations, but also for customers. Consumers compare experiences across industries and expect to be able to find reviews and give feedback, have their views taken into account, and collaborate with their favourite brands. Consumers are better informed than ever, which means they make smarter decisions that lead to better outcomes. The rapid evolution of personal technology has created consumer thirst for innovative new services and products.

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Risk

There are risk factors as well as advantages to using big data. A more data-savvy public often objects to the kind of profiling that data analytics is so good at executing. Regulators, too, are becoming more aware of the power of data analytics. To use data, one needs to have the data. In the future, effective data analytics will require an effective data strategy to plan for the collection of data, including purchasing and accessing external data sets.

It has never been so easy to use data to make mistakes more quickly than ever before. With big data and faster decision making, understanding the quality of the data is of primary importance. Taking advantage of the availability and power of data can cut costs, raise revenue and help futureproof a business. But that is also true for the organisation's competitors.

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Approach to Big Data

Data analytics is a powerful tool, but the key to successful use of data relies on understanding what is being looked for in advance or applying systematic techniques that can be relied on to determine answers. A specific, measurable, actionable, realistic, timely (SMART) approach to big data is a powerful option

and has been and is being deployed. Organisations must pick the appropriate technique and method and be bold enough to act on the findings. They must ensure that in any big data exercise, a customer fairness lens is always applied to validate any findings and evidence to ensure regulatory compliance.

There are several themes organisations need to master to be successful:

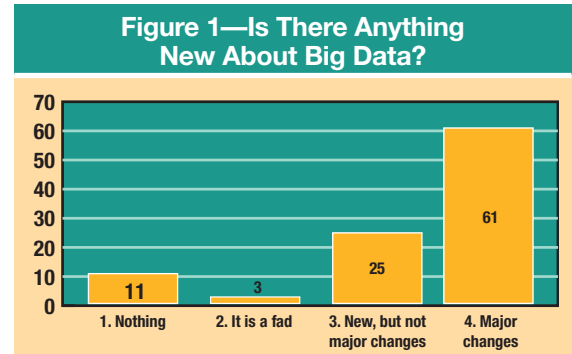
- **Know the customer.** Understand the rapidly evolving digital customer's behaviours, needs and desired outcomes, and the impact on profitability and growth.
- **Develop products.** Create new business ideas for incubation and development to scale.
- **Create strategy.** Design a strategy that addresses the required proposition and optimal operating model and a clear route to achieving it.
- **Foster interaction.** Adopt agile approaches to design, build and integrate enterprise-wide social, mobile and web solutions.
- **Manage risk.** Be equipped to protect the organisation's assets, data and reputation against the threats of the digital world.

Difference Between the Traditional and SMART Approaches

In the traditional approach, the first step is to collect and manage data, then analyse them, draw insight with that analysis and, finally, make decisions based on the analysis performed. In the SMART approach, the first step is to predetermine decisions and, based on those determinations, gain necessary insight. Determine the data required to draw such insight, then collect and manage the necessary data. However, data managers should pay attention to the quality, completeness and accuracy of the data collected for the purposes of the analysis, which continues to be a major concern in this approach.

Questions for the Audience

During the event, there were 10 questions addressed to the audience, which were answered by more than 100 attendees. These are the questions and answers



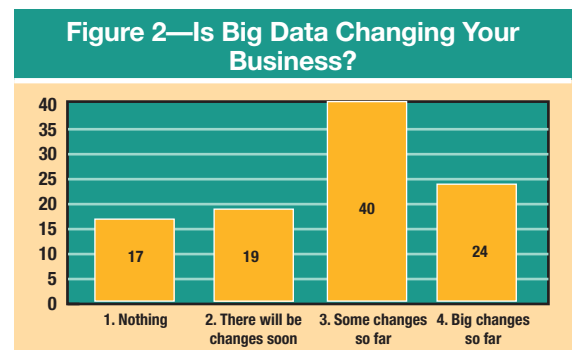
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in percentages from the audience.

Question 1: Is there anything new about big data (figure 1)?

The possible answers to this question were:

1. No, there is nothing new.
2. It is a fad, and it will all disappear when people realise nothing has changed.
3. It is new, but it is not going to change the world.
4. It is going to change the world.



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Result: More than 60 percent of the audience believed that the change will be significant and, therefore, that drastic changes will happen in organisations' operations in the short term. Comments raised during the event indicated that the general feeling of the audience is that organisations that do not embrace big data soon may lose competitive advantages over competitors.

Question 2: Is big data changing your business (figure 2)?

The possible answers to this question were:

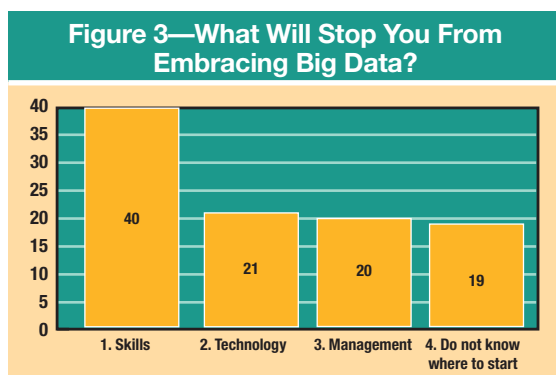
1. No changes so far, no changes soon.
2. No changes so far; there will be changes soon.
3. Some changes so far, but they are minor.
4. Big changes so far, more in the near future.

Result: Most of the people in the audience believed that there will be changes, but there were different opinions on how big those changes will be. Some of the comments indicated that there have been more changes in financial and telecommunication organisations than in the rest of the sectors.

Question 3: What will stop you from embracing big data (figure 3)?

The possible answers to this question were:

1. Skills
2. Technology
3. Management's disinclination to embrace it
4. Do not know where to start



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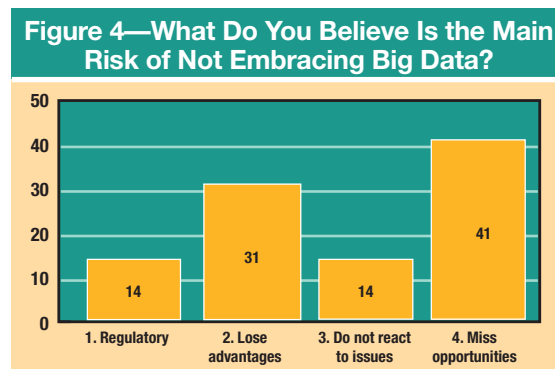
Result: It was broadly recognised that lack of skills is one of the key challenges to embracing big data. Most of the organisations represented in the audience do not have resources with the necessary capabilities to implement big data solutions. Comments from the audience revealed that

organisations were trying to hire data analysts, but they were having difficulties finding candidates with the necessary expertise.

Question 4: What do you believe is the main risk of not embracing big data (figure 4)?

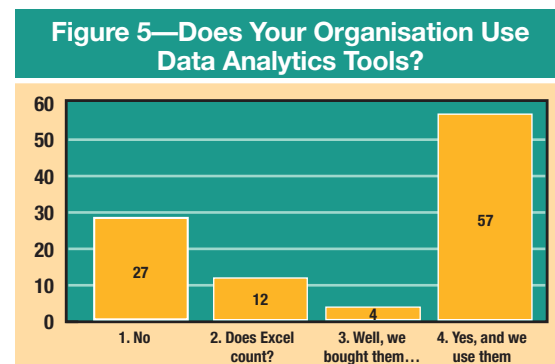
The possible answers to this question were:

1. Regulatory noncompliance
2. Lose advantages against competitors
3. Do not react to potential issues on time
4. Miss potential opportunities



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Result: It was broadly recognised from the comments collected that the commercial side of big data and loss of potential opportunities were the main risk areas of not embracing big data in all sectors in general, whereas the regulatory risk factors were just recognized in financial services organizations.



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Question 5: Does your organisation use data analytics tools (**figure 5**)?

The possible answers to this question were:

1. No
2. Does Excel count?
3. Well, we bought them, but we have not used them.
4. Yes, and we use them to analyse our data.

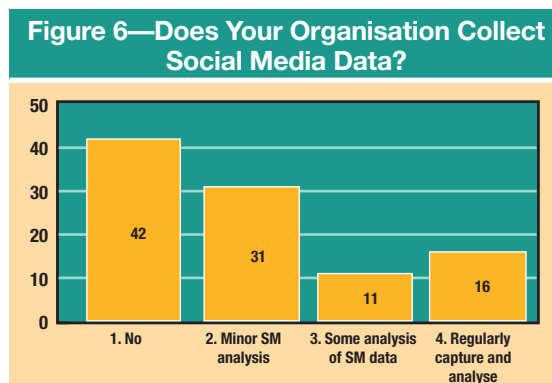
Result: More than half of the audience affirmed to have data analytics tools that they use to analyse data. Some of the comments raised indicated that those tools are usually managed by IT teams and they were not embedded in the business.

Question 6: Does your organisation collect social media data (e.g., Twitter, LinkedIn, Facebook) (**figure 6**)?

The possible answers to this question were:

1. No
2. Minor social media analysis. Our marketing people look at Twitter and Facebook.
3. We have done some analysis of social media data.
4. We regularly capture, analyse and act on social media data.

Result: The majority of the audience recognised that unstructured data (i.e., social media) are not



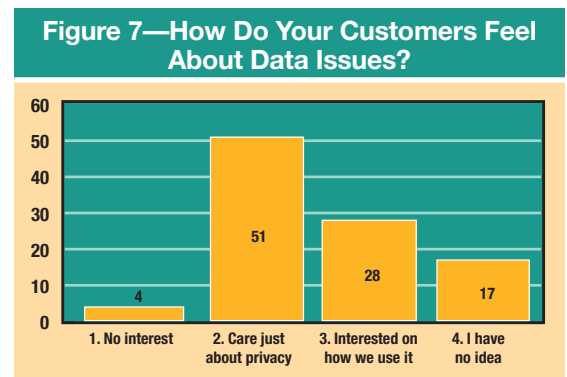
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collected nor used properly for further analysis in a robust process. Some comments from the audience reflected that their organisations are far away from using social media regularly.

Question 7: How do your customers feel about data issues (**figure 7**)?

The possible answers to this question were:

1. They have no interest in data issues.
2. They care only about privacy and security.
3. They are interested in how we use and profile our data.
4. I have no idea.



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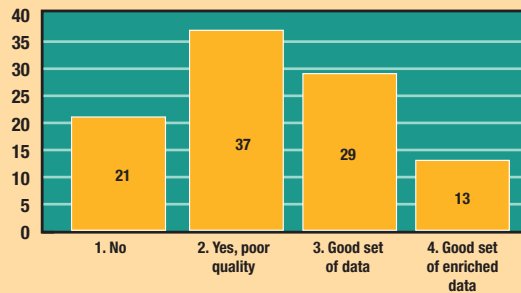
Result: Customer data privacy and security were key issues for the audience. The audience mentioned a couple of recent scandal examples and showed their concerns of managing big volumes of data with access from different applications and systems. The main concern was to control unauthorised access to all systems and applications and maintain those controls.

Question 8: Do you have the data you need (**figure 8**)?

The possible answers to this question were:

1. No.
2. Yes, but the quality is poor.
3. Yes, we have a good set of data.

Figure 8—Do You Have the Data You Need?



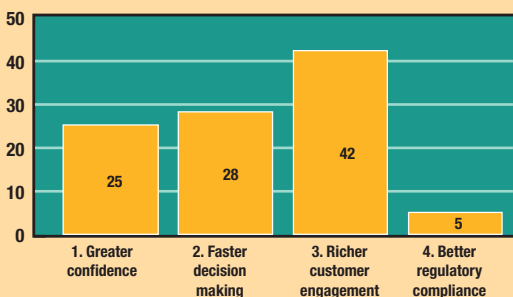
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4. Yes, we have a good set of data and we enrich it with external sources.

Result: There were some concerns among the audience about the impact of the quality of the data collected on the accuracy of the results obtained, particularly on the unstructured data. For most of the companies, this is the first time they are going through this process and, therefore, this was the main reason for those concerns.

Question 9: What do you think is the biggest advantage of big data (**figure 9**)?

Figure 9—What Do You Think Is the Biggest Advantage of Big Data?



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The possible answers to this question were:

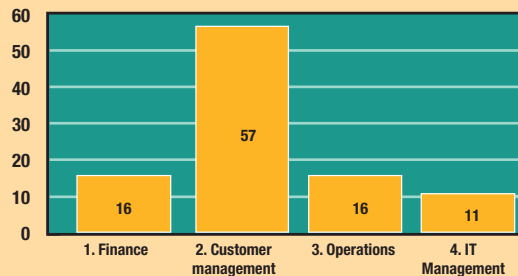
1. Greater confidence in decisions
2. Faster decision making
3. Richer engagement with customers

4. Better regulatory compliance

Result: In line with the results of question 4, the commercial side of big data, as characterised by interaction with customers, is the key advantage for almost half of the audience.

Question 10: Where in your business do you believe that big data is going to have the biggest impact (**figure 10**)?

Figure 10—Where in Your Business Do You Believe That Big Data Is Going to Have the Biggest Impact?



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The possible answers to this question were:

1. Finance
2. Customer management/relations
3. Operations
4. IT management

Result: As indicated in questions 4 and 9, customer management is the area identified by the audience where big data can have the biggest impact.

Conclusion

During the event, there were table discussions and question and answer sessions, and most of the comments raised by the attendees were collected. It was broadly recognised that most of the companies have started to embrace big data; however, in the coming years there will be more changes in order to adapt business operations so they can handle larger volumes of data.

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It was generally recognized through the survey that improvements in customer management and the identification of new opportunities will be the key advantages for companies that embrace big data. On the other hand, the biggest concerns about big data implementation were customers' data privacy and the impact of the quality of the data collected on the results' accuracy. Some of the recent scandals have raised the awareness in organisations and, therefore, security controls should be implemented around these technologies to avoid unauthorised access. Additionally, the lack of experience implementing these technologies could cause data quality issues, which may lead to inaccurate analysis. To avoid these issues, organisations should implement controls, such as reconciliations or validation tests, to ensure the validity of the information.

It was also recognised that the impact of big data in organisations depends on their sector. There were different views of the risk for companies from the financial sector and other sectors. Organisations from nonfinancial services did not consider regulatory requirements a key risk, whereas organisations from the financial sector did.

During the final debate, PwC mentioned some areas to consider before implementing these technologies. Those areas and some of the comments from the audience included:

- **Data strategy**—Organisations wishing to invest in significant data-led propositions need to understand the commitment required in terms of skills, infrastructure and software. A data strategy is required to set a course for how this may be achieved. This strategy should be aligned with the business and IT strategies and should focus on fulfilling business requirements.
- **Data analysis and management information**—As the volume of data proliferating in organisations continues to grow and data analysis tools

become more sophisticated, there are significant opportunities for companies to enhance customer experience through the detailed analysis of data. This can range from increased understanding of customer behaviours to developing more sophisticated pricing structures and market positioning. It is critical for the success of the analysis to have the right tools and skills to manage the data collected.

- **Data governance**—Data governance policies, procedures and controls should be implemented in order to obtain the appropriate data quality levels. Organisations need to be able to use data with confidence in their integrity and quality and with the assurance that poor data are not feeding important analyses, the output of which may be driving important business decisions.
- **Data privacy**—The increase in the amount of data held by clients also represents an increase in the risk of a data privacy breach or contravention of the terms of the UK Data Protection Act of 1998 (DPA).
- **Capacity**—Organisations should ensure that systems and technology are able to support the volume of data necessary to analyse the volume of data required.
- **Skills**—Organisations should ensure that they have appropriate skills to manage the volume of data required now, and the appropriate recruiting process and training programs in place to improve the skills of personnel as technology changes.
- **Data architecture**—Organisations should consolidate all sources of data required for the analysis in a common data model such as a data warehouse. Data architecture design and extract, transform and load (ETL) processes are critical areas for the success of this common data model and should be assessed and included in the strategy.