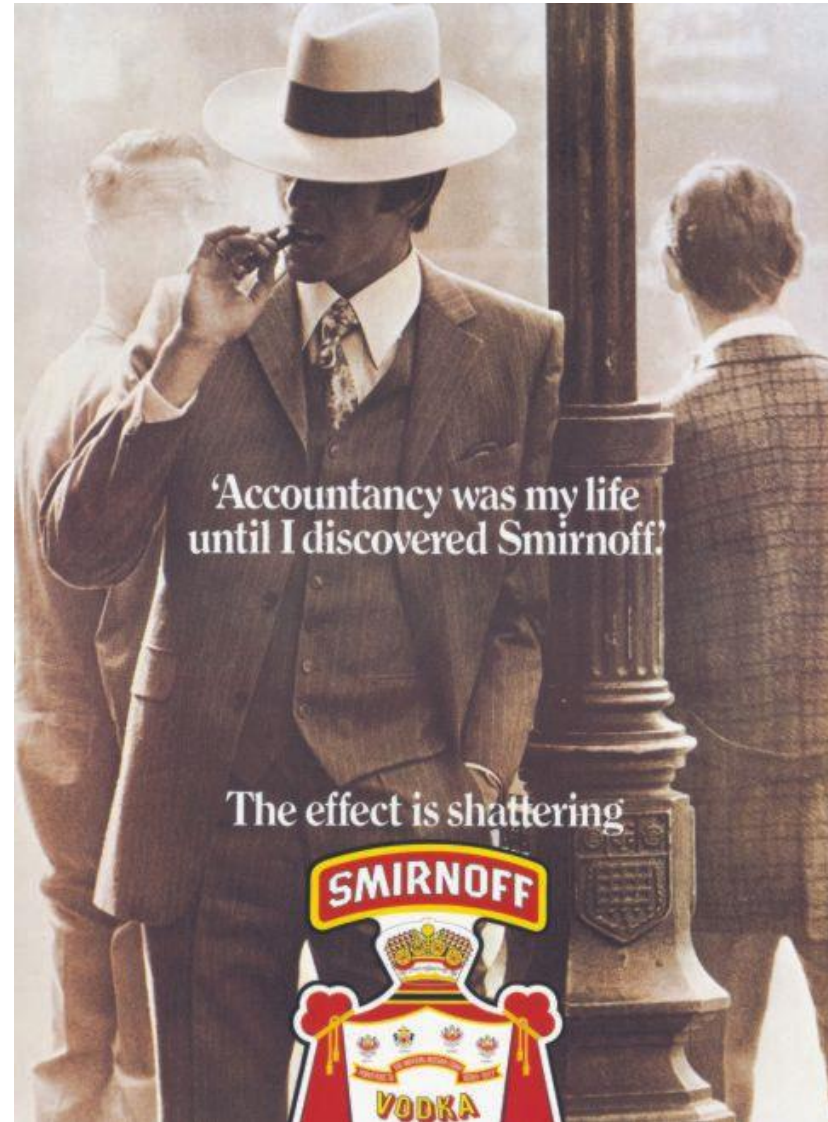


Big Data: Impact, Benefits, Risk and Governance

Urs Fischer, CPA (Swiss), CRISC, CISA, CIA
Fischer IT GRC Consulting & Training

Urs Fischer





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Agenda

1. Introduction
2. Impact on the Enterprise
3. Business Benefits
4. Risks and Concerns
5. Strategies for Addressing Risk
6. Governance

Introduction

Experienced business and IT professionals know that optimizing their use of big data as a resource will deliver real business value to enterprise stakeholders. A comprehensive governance and management approach is needed to realize those benefits and manage the risk associated with the collection, analysis and storage of sensitive information, and the resource implications involved.

Source: Big Data . Impacts & Benefits ;ISACA White Paper, March 2013



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Definition

Big data refers to data sets that are too large or too fast-changing to be analysed using traditional relational or multidimensional database techniques or commonly used software tools to capture, manage and process the data at a reasonable elapsed time.

Source: Big Data . Impacts & Benefits ;ISACA White Paper, March 2013

Mind Reading



http://www.youtube.com/watch?feature=player_embedded&v=F7pYHN9iC9I

<http://www.safeinternetbanking.be/nl/dave-campagne>

Data

- “ **Volunteered Data**
Created and explicitly shared by individuals
e.g., social network profiles
- “ **Observed Data**
Captured by recording the actions of individuals
e.g., location data when using cell phone
- “ **Inferred Data**
Data about individuals based on analysis of volunteered
or observed information
e.g., credit scores

Source: Big Data . Impacts & Benefits ;ISACA White Paper, March 2013



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Impacts on the Enterprise

- “ Governance
- “ Planning
- “ Utilisation
- “ Assurance
- “ Privacy

Privacy È a hoax?

Laws protect the privacy of individuals and any information collected about them, even if people share confidential information inappropriately.

Source: Big Data . Impacts & Benefits ;ISACA White Paper, March 2013

Objective

The primary objective of analyzing big data is to support enterprises in making better business decisions.

Source: Big Data . Impacts & Benefits ;ISACA White Paper, March 2013

Business Benefits

Enterprises that master the emerging discipline of big data management can reap significant rewards and differentiate themselves from their competitors.

Source: Big Data . Impacts & Benefits ;ISACA White Paper, March 2013



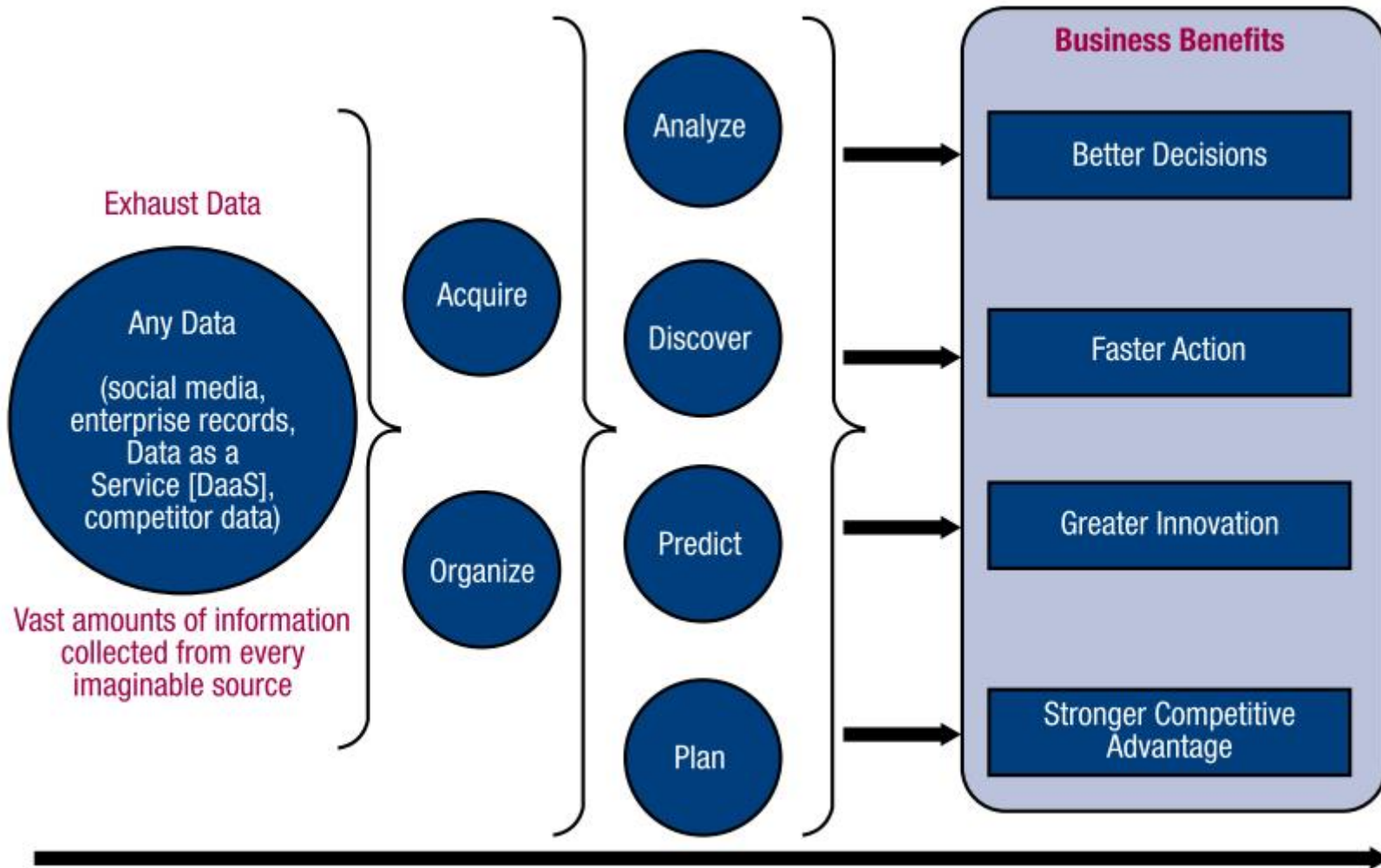
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Positive Impact of Big Data Analytics

- “ Product Development
- “ Market Development
- “ Operational Efficiency
- “ Customer Experience and Loyalty
- “ Market Demand Predictions

Insights from Big Data



Source: Big Data . Impacts & Benefits ;ISACA White Paper, March 2013



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Four-Tier Plan

1. Take time to strategise
2. Think analytically
3. Ask for what is needed
4. Invest to improve

Questions

- “ Where should we store the data?
- “ How are we going to protect the data?
- “ How are we going to utilise the data safely and lawfully?

Risk and Concerns

**Inaccurate, incomplete or fraudulently
manipulated data pose increasing risk as
enterprises become more
dependent on the data to drive decision
making and assess results.**

Source: Big Data . Impacts & Benefits ;ISACA White Paper, March 2013

Security & Privacy

- “ Private or custodial information such as credit card numbers, personally identifiable information such as Social Security numbers, and personal health information
- “ Strategic information such as intellectual property, business plans and product designs
- “ Information such as key performance indicators, sales figures, financial metrics and production metrics used to make critical decisions



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Points of Tension

- “ Privacy
- “ Global Governance
- “ Personal Data Ownership
- “ Transparency
- “ Value Distribution

Minimize Potential of Damage

To minimize the potential for damages resulting from inaccurate or fraudulent data, enterprises should take inventory of all the data sources they are pulling into their analyses and assess each source for vulnerabilities.

Source: Big Data . Impacts & Benefits ;ISACA White Paper, March 2013

Strategies for Addressing Risk

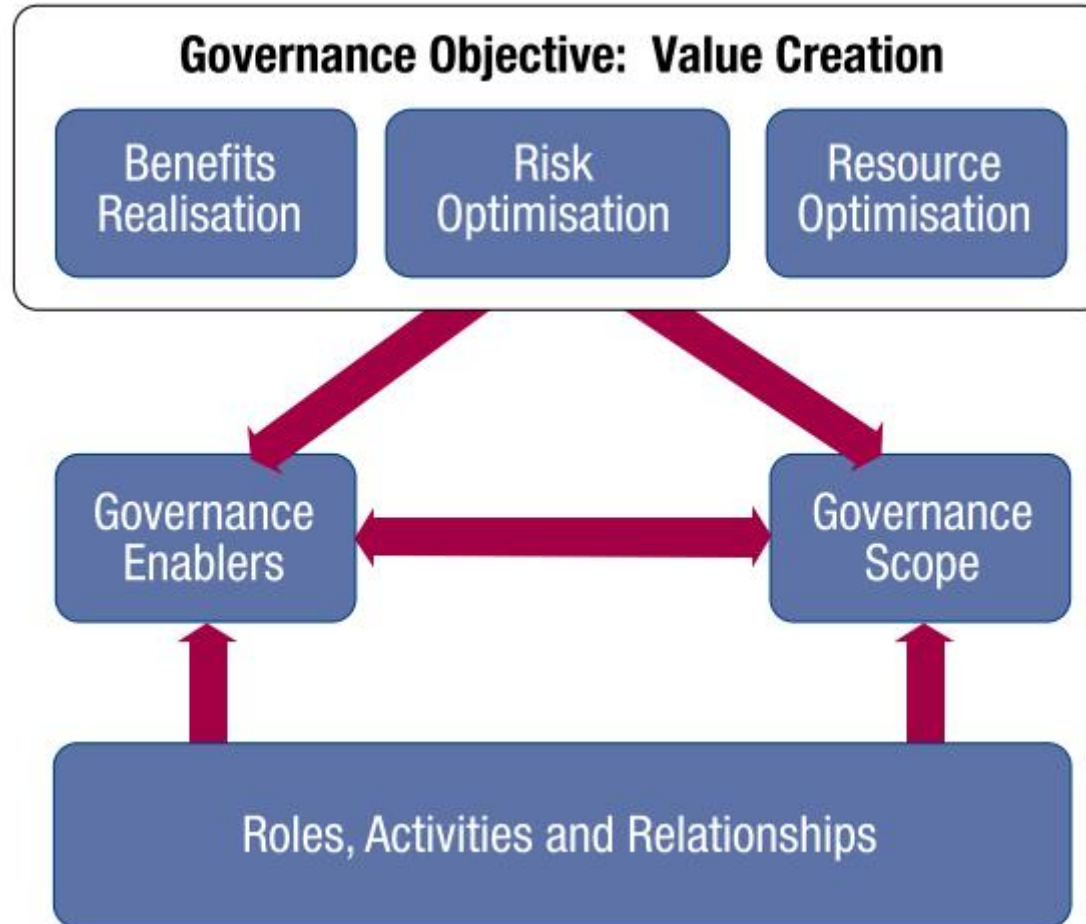
- “ Determine what internal resources and capacities are available to digest existing information.
- “ Determine what tools are needed to enhance the information acquisition and digestion process.
- “ Address how information will be used to achieve both tactical and strategic goals, if the determination is made that new and/or different information is needed.
- “ Develop or obtain training programs for the team.
- “ Determine whether a data scientist is needed.
- “ Establish realistic expectations and create a tactical plan.

Quality

Intrinsic Quality	Contextual and Representational Quality	Security/Accessibility Quality
<ul style="list-style-type: none">• Accuracy• Objectivity• Believability• Reputation	<ul style="list-style-type: none">• Relevancy• Completeness• Currency• Appropriate amount of information• Concise representation• Consistent representation• Interpretability• Understandability• Ease of manipulation	<ul style="list-style-type: none">• Availability/timeliness• Restricted access

Source: Big Data . Impacts & Benefits ;ISACA White Paper, March 2013

End-To-End Governance



Source: COBIT 5, ISACA 2012

Proper Data Governance

Without a proper data governance process, big data projects can unleash a lot of trouble, including misleading data and unexpected costs.

Source: Big Data . Impacts & Benefits ;ISACA White Paper, March 2013

Data Governance Programs

Data governance programs provide a framework for setting data-usage policies and implementing controls designed to ensure that information remains accurate, consistent and accessible.

Source: Big Data . Impacts & Benefits ;ISACA White Paper, March 2013

Fundamental Questions

- “ Do we fully recognize the responsibilities associated with handling big data?
- “ How does big data change the traditional concept of information as a corporate asset?
- “ What are the emerging requirements around privacy?
- “ How do the big data technologies relate to our current IT infrastructure?

Conclusion

The enterprise culture, which either fights or embraces innovation, requires a big data leader who understands his/her role in innovation or enterprise direction. In addition, the leader must:

- “ Manage expectations
- “ Reward behaviours rather than results
- “ Shield data scientists from the detailed scrutiny of management and investors
- “ Manage projects
- “ Communicate well to span the enterprise channels

Fragen / Diskussion





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- “ Switch to IT Audit . In IT Audit for 13 years incl. Head of IT Audit
- “ 2004-2010 Head IT Governance & Risk Mgmt
- “ Since 2011 independent IT GRC Consultant and Trainer

- “ Co-Author of CobiT4 and now participant of the development of COBIT5
- “ Co-Developer of CobiT Control Practices
- “ Co-Developer of ISACA's IT Control Objectives for Cloud Computing+

- “ Board member of ISACA CH Chapter for about 8 years
- “ Member of the CobiT Steering Committee for 3 years
- “ Member and Chair of ISACA's EuroCACS Conference Programme Committee for 6 years
- “ 2008 . 2009 Chair of ITGI's 'Risk IT' Task Force
- “ 2009 . 2010 Chair of ISACA's CRISC Task Force
- “ 2006 . 2011 Member of ISACA Audit Committee (since 2008 . 2011 Chairman)
- “ 2010 . 2011 Member of ISACA's Guidance and Practice Committee
- “ 2009 . 2012 Member of ISACA's Credentialing Board
- “ 2010 . 2012 Chair of ISACA's CRISC Committee
- “ 2012 Member of ISACA/ITGI's Nomination Committee

- “ 2010 Receiver of the John W. Lainhart IV . Common Body of Knowledge Award