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Information Management and Big Data – a Framework for Success

Abstract

More than ever before, information can create significant competitive advantage for organizations across all industry sectors. More data is available to organizations from multiple sources, from within the organization and from external sources. However, data may not always be available in the right format or when it is needed, or organizations may not have the skills to make best use of the large data volumes or various data formats available including unstructured data.

Additionally new terminology is emerging. The term '*Big Data*' is generally used to describe data with significant volume, velocity and variety. Irrespective of whether the business priority is to improve information management generally or to understand and make best use of '*Big Data*', the key is to get right the basics of information management (such as strategy, policies, data quality and life cycle management), as well as the new and changing considerations of information security, privacy, controls and skills. Consequently, organizations need a mechanism to integrate all these aspects of data management in order to understand their current position, agree their target position, and develop a structured approach to achieve their goals.

KEYWORDS: data, data volumes, data formats, Big Data, information management, data management, investment, business intelligence and analytics, IVI, innovation, Enterprise Information Management, EIM

Introduction

Organizations undoubtedly see the potential value of the increasing volumes of data available to them. A '*Forrester*' survey conducted in the latter part of 2011 about organizations' plans to adopt packaged business applications, identified Business Intelligence (BI) as the top planned business application, ahead of CRM and collaboration software, with 42% planning a BI project in the next twelve months [1]. However, organizations also realize the challenges they face. A '*Computing*' survey conducted in January 2012 asked organizations 'What prevents value that is locked into data from being realized?' [2]. The top two barriers identified by organizations across all sectors were

'budget constraints' and *'lack of awareness that value exists'* followed closely by *'lack of analytical skills'*. Clearly, if organizations feel they are unsure what value may exist that is yet to be unlocked, and also that they lack the analytical skills, they will struggle to articulate a robust business case to overcome budget constraints and justify the necessary investment in information management. Additionally, 34% of respondents to that survey identified *'inertia / resistance to change'* as a problem, indicating that to take advantage of the opportunity presented by improved information management will require a robust assessment of the opportunity that involves all stakeholders as well as a cohesive and structured improvement programme.

Seizing the opportunity will take more than just understanding what data is available that could be better used; it is also about knowing what data is needed that is not currently available. Therefore, the first steps are to revisit the fundamentals of what business questions need to be asked and how to get the answers.

Getting the Basics Right

The topic of *Big Data* is still relatively new and therefore subject to a variety of opinions on its definition, scope and criteria. There are also those who question whether *Big Data* is genuinely something new or simply a new term for a significant business topic that is undoubtedly increasing its profile in terms of business potential and value, and therefore presents new considerations and potentially new approaches. At present, the term *Big Data* is generally accepted as referring to data that has three specific characteristics – significant volume, velocity and variety – and will therefore require, as a minimum, additional skills and potentially new tools as well. Even among those who remain undecided as to whether they have a *Big Data* need, there is recognition of the immense opportunities offered by improved information management and analytics.

So, for those organizations that recognize the need simply to improve their information management and for those that believe they can realize the huge business potential offered by *Big Data*, the starting point remains the same – to know your current capabilities and to be able to set a clear goal and plan for where you need to be – using the basic categories of effective information management as a foundation.

These basic categories include:

- Strategy and organization: to define the organization’s current and future strategic uses of information, to build or enhance a cross-functional steering team to implement that strategy via the setting and monitoring of specific goals, and to develop competences and communities in data management.
- Policies, standards and controls: to develop and communicate standards and policies specifically for data governance, and to establish an appropriate and effective control framework.
- Information management: to address the core components of information quality and valuation, management of master and meta data including data flows throughout its life cycle – to ensure that content such as data flows and ownership for business critical information is provided to business continuity planning activities, and to ensure that security is well integrated into information management throughout its life cycle.
- Business intelligence and analytics: to provide clean and accessible information for analytics, and to promote a culture of business analytics and intelligence for decision making.

To improve their information management, organizations need to first understand how mature and effective the organization is in each of these categories individually and then understand how these categories work together collectively.

Figure 1 shows Innovation Value Institute’s (IVI’s) view of these categories and their associated capability building blocks.

Figure 1: IVI’s view of the basic categories of information management

Category	Capability Building Block
Strategy and Organization	Information Management Strategy
	Information Governance
	Competences and Communities
Policies, Standards, and Controls	Standards and Policies
	Controls
Information Management	Information Valuation
	Master Data Management
	Metadata Management
	Information Quality
	Information Lifecycle Management
	Business continuity planning
	Information Security
Business Intelligence and Analytics	Leadership
	Preparation
	Reporting

Other Considerations

It has long been recognized that successful information management is less about knowing how to make use of available data and more about knowing what business questions need to be asked (and answered),

whether the information to answer those questions is currently available or not. This capability remains fundamental to improving business insights and to avoiding feeling overwhelmed by the increasing sources and volumes of data available.

A further consideration in the generation of new business insights is that of the organization's ability to innovate. Seizing the opportunities to acquire and use new sources of data, or combining data for competitive advantage use, demands many of the capabilities used in successful innovation such as collaboration, acceptance of different risk profiles, and portfolio management. Organizations frequently recognize the value of innovation and are keen to develop their innovation capabilities but may also regard innovation as somewhat intangible and therefore hard to address. In reality, maturity in innovation can be assessed and improved in a structured way that includes elements such as strategy, people and culture, and processes and tools.

Organizations that have only sporadic success in innovation, with concerns about risk and lacking a framework for responsibilities and recognition, have only a basic level of maturity in innovation. Such a maturity level may be too low to reap rewards from advanced information management. Organizations at a higher level of maturity in innovation management will typically be characterized by having: funds allocated specifically to innovation, training provided, recognized roles and responsibilities, and visible rewards and recognition for innovation, established consistently throughout the organization.

Also, in assessing their capability to innovate, some organizations find it easy to generate ideas and possibilities but struggle to translate those ideas into commercial activities, and therefore find investment hard to justify. For others, the challenge is in generating those ideas in the first place, especially if innovation is not a recognized corporate or industry priority.

Whichever the challenge, capability in innovation is an important component in the development of a successful information management improvement programme.

Balancing the Opportunity and Risk

The greater volume of information available, the huge increase in its use for new business purposes, extended supply chains and changing customer expectations mean that the assessment and management of risk and security must form major components of an information management programme. Changing business and IT models, new technologies and the '*information explosion*' mean that legislation and regulation are being tested thoroughly and extensively. Location, and ownership and stewardship of data throughout its life cycle (including the purpose for which such data is being collected and used) create challenges for risk management, security and privacy functions.

Finally, the combination of the greater volume of information available and the increased objective of organizations to harness and make use of that information has led to increased development of new tools. While some tools are designed for the business user, others are aimed at specialists. To justify investment in tools as they mature and evolve, assessment of the organization's needs and the skills needed by both business users and specialists to use such tools effectively are as important as gaining and maintaining familiarity with the evolution of the tools themselves.

Recommendations

Whether you need a *Big Data* approach or simply want to improve your information management and analytics capabilities, the following five-point action plan will help you get started.

- Assess your current situation. Be rigorous and structured about it, include all key stakeholders, and assess your organization in terms of: information management strategy, and governance, policies and controls; data management; skills and capabilities; security; and business intelligence and analytics.
- Agree where you need to be, the business drivers for change, and the urgency to achieve such change. Base the target on factors such as your industry and competitors, and your current and planned business model and priorities; and develop a timeframe for improving your capabilities.
- Set clear goals and prioritize your action plan - this can be achieved by examining how you can build on what you already have, identifying potential quick wins, and assessing the risks.
- Choose an area to pilot within a precise timeframe and build in a structured plan to assess the success of the pilot and to gain key learning points in order to support the main improvement programme.
- Position information management and analytics capabilities as a business priority, ensuring a clear plan, targets and goals, measures, and accountabilities; and ensure you can measure progress and improvement.

Using IT-CMF

Enterprise Information Management (EIM) is one of the critical capabilities within IT-CMF, which is a framework designed to assist IT and business executives to manage IT for business value. EIM develops, establishes and manages operational systems to effectively gather, manage, disseminate, leverage and dispose of information artefacts. EIM combines the strategic, operational and security aspects of information management with the capabilities to analyse and exploit information.

References

1. Survey of Big Data – *Computing*, January 2012.
2. Forrsights Software Survey – *Forrester*, Q4, 2011.

About the Author

Sheila Upton is an IT professional with over 30 years experience gained via a variety of business and IT management roles across a range of industries and in professional services. She has focused extensively on building successful relationships between business and IT, realising tangible business value from IT, and on new and emerging business and IT opportunities and risks. Sheila can be contacted at:
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About IVI

The Innovation Value Institute (IVI) is a multi-disciplinary research and education establishment co-founded by the National University of Ireland Maynooth and Intel Corporation. IVI develops frameworks to assist IT and business executives to manage IT for Business Value and to deliver IT-enabled business innovation. IVI is supported by a global consortium of like-minded peers drawn from a community of public and private sector organizations, academia, analysts, professional associations, independent software vendors, and professional services organizations.

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