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In data we trust: establishing the value of information, big data and analytics
Series Article
Prof Darren Dalcher

Advances in Project Management Series[1]

In data we trust: Establishing the value of information, big data and analytics

Introduction to this month's series article

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Interest in data and its uses has always been central to the various management disciplines and to professionals concerned with decision making capabilities. In recent years the terms *big data* and *analytics* have been bandied about as the new trends that will empower organisational intelligence and inform decision making, ultimately resulting in improved performance, optimal use of resources and sustained growth.

Data has proved to an alluring resource over many generations. Indeed, different forms of knowledge have long been equated with wealth and prosperity and it was only natural that the collection of potentially useful facts would be increasingly viewed as an organisational resource, asset, or goldmine ready to be harvested.

Data anxiety

Yet, too much of a good thing can often prove to be harmful or excessive. American novelist Gertrude Stein quipped: "everybody gets so much information all day long, that they lose their common sense".

The growing availability of data sources means that excessive quantities of information could be collected and harvested, if only one could find the time and inclination to process all the new insights… Terms such as data glut, data smog, data pollution, and data tsunami were coined to express the mounting confusion and frustration with the growing mountains of data and the inability to make sense of important trends through the amassing noise.

Roman stoic philosopher and statesman, Seneca noted that: "Even for studies, where expenditure is most honourable, it is justifiable only so long as it is kept within bounds. What is the use of having countless books and libraries, whose titles their owners can scarcely read through in a whole lifetime? The learner is, not instructed, but burdened by the mass of them, and it is much better to surrender yourself to a few authors than to wander through many."

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[1]*The Advances in Project Management series includes articles by authors of program and project management books published by Gower in the UK. Each month an introduction to the current monthly article is provided by series editor **Prof Darren Dalcher**, who is also the editor of the Gower Advances in Project Management series of books on new and emerging concepts in PM. For more on Gower project management, visit http://www.gowerpublishing.com/default.aspx?page=2063. See Darren's background summary at the end of this article.*

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The impact on business was assessed by a 1996 Reuters study focusing on information fatigue in the UK, USA, Singapore and Hong Kong. The findings indicated that 38% of the 1,300 managers surveyed waste substantial amounts of time just looking for information, with 43% reporting delayed decisions as a result of too much information. 47% admitted that information collection distracts them from their core responsibilities, while 49% reported that they were unable to handle the vast amounts of information they accumulated.

More alarmingly, 42% acknowledged suffering ill health as a direct result of the information overload with 61% conceding that they had to cancel social activities as a result. Furthermore, 66% of managers reported tension with colleagues and diminished job satisfaction as a consequence of information overload. In the two decades since the research was conducted, available data and information have grown exponentially, with many information workers reporting that they feel under siege by the wave of data, facts and communication that comes their way.

Data or information?

It is important to invoke the distinction between two terms that are often used interchangeably. **Dat**a is the distinct facts, numbers, words and images; the raw input of organisational life. Once, they are processed in some meaningful way, they become **information** that is interpreted and understood for a particular purpose. In this way, raw stores of data can be processed to derive useful, important or meaningful information that is required to underpin effective decisions.

Organisations can thus be viewed as information processors capable of collecting, identifying and utilising the important and pertinent pieces of data needed to endow and sustain organisational life.

The Nobel Prize winning economist Herbert Simon noted that a wealth of information creates a poverty of attention. Such ideas underpin the concept of the attention economy, which treats human attention as a scarce commodity, a limiting factor in the consumption of new information. The challenge faced by many organisations is to maintain their attention reserves, and concentration, against a backdrop defined by a never-ending glut of data.

Enter information management

Information management as an organisational function is therefore concerned with developing mechanisms for filtering and aggregating data to distinguish important features and insights.

The sixth edition of the APM Body of Knowledge identifies information management at the core of integrative management, alongside key concepts such as business case, planning, control, organisation and stakeholder management. Information management is defined as the collection, storage, dissemination, archiving and destruction of information, which enables teams and stakeholders to use their time, resource and expertise and make decisions.

While information management may apply during project work, it is an essential part of the organisational infrastructure required to address decision making at every level across the

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organisation. The acts of filtering and aggregating relevant data to support effective decision making pertain to everyday operational decisions, temporary project assignments, portfolio balancing, and enterprise–wide strategic considerations. As the scope of operations increasingly encompasses extended life cycles, and wider societal and environmental concerns, the supporting infrastructure required to make these decisions is growing in importance, and potential impact.

Big data and analytics

Emerging new technologies enable organisations to collect and interact with ever-larger quantities of data. Given the exponential growth and availability of data, the term **big data** relates to the superset of connected data sources containing voluminous amounts of data that can be linked, manipulated and mined for meaningful or insightful information. **Analytics** relates to the exploration, discovery and communication of meaningful patterns within such data.

The combination of big data and analytics implies extremely large datasets, extensive computation and a range of algorithms, statistical methods and visualisation techniques that can be used to explore, identify and communicate patterns and insights.

The combination is heavily utilised in marketing, demographic analysis, customer trends, portfolio analysis in banks in insurance settings, computation of risk scores for customers, and security applications. Large organisations from Amazon, Google and Facebook to Walmart and Visa have major initiatives in place. However, smaller organisations are looking to get into the act. Big data initiatives underpinned by powerful analytics tools extend from enterprise projects, to midsize organisations and midmarket projects. A recent survey conducted for Dell indicates that 41% of respondents have one or more big data projects already in place, with a further 55% planning to start one in the near future. 89% of respondents with big data initiatives report significant improvements in decision-making within the organisation.

Big data projects have been used to cut waste, enhance performance, improve efficiency, understand customers, and identify patterns. In the future, we are likely to see big data becoming more important part of most organisations. Above all, it is likely to become an increasingly essential component of smart decision making.

However, the collection of increasing volumes of data also contributes to a growing sense of anxiety about data overload…

The power of small data

This month's article, *Realising value out of Big Data through Small Data*, written by Roel Wolfert and Roger Davies offers a foretaste of their book due to be published by Gower in 2016. The starting point for the article is the role of big data as a game changer and the huge potential on offer to discover new insights that were not possible previously. However, like all other tools, big data needs to be understood in context of what it has to offer. Roel and Roger point out that big data initiatives offer the potential for new types of failures, especially in terms of too many reports and projects of dubious value.

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The authors make a strong case for using a value-based approach to determine the potential benefits that can be delivered through specific big data initiatives. It is essential in most endeavours to identify what is of importance and the article suggests that the use of 'small data' provides a clear link to strategy to ensure that value is created through the initiative, it also provides the mechanism for 'managing' the big data and the process for deriving and utilising insights.

Making sense of data

Data is essential to both management and leadership as it provides the fundamental starting point and basis for making sound decisions. French military and political leader, Napoleon Bonaparte opined that "war is ninety per cent information". He often attributed his military success to having the right information.

Early information systems researchers identified the notion of Critical Success Factors as essential to identifying the information needs of Chief Executives, asserting that CEO's must define their own informational needs in order to govern the process of identifying the data that is actually needed for them to make informed decisions and execute their jobs.

The authors have provided a further rationale for governing the emerging trends of big data and analytics and determining which aspects are critical. They suggest that value management delivers a logical link between what is desired and what can be found in order to establish value insights.

Sir Arthur Conan Doyle warned about the perils of guessing, through his fictional character Sherlock Holmes: "I never guess. It is a capital mistake to theorise before one has data. Insensibly one begins to twist facts to suit theories, instead of theories to suit facts". … "The temptation to form premature theories upon insufficient data is the bane of our profession".

Avoiding both premature theories and the stress that comes from having too much information is essential. The success of future big data projects, and the initiatives and operations that they underpin will depend on our ability to find the balance that will avoid such premature theories and form an established, yet adequate, basis for making well informed decisions on the things that really matter.

It is often asserted that information is 'the oil of the 21st century'. More recently it has been added that 'data analytics will provide the combustion engine'. Our role therefore is to ensure we build the right engine for the right purpose at the right time and place, and use it as intend to deliver real and lasting value.

References:

Lewis D. (1996). Dying for Information. London: Reuters Business Information

Competitive Edge Research Report (2014). Roadblocks crumbling: Midmarket companies see early success with big data. Newton, MA: Competitive Edge Research Reports

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Darren Dalcher, Ph.D. HonFAPM, FRSA, FBCS, CITP, FCMI is Professor of Project Management at the University of Hertfordshire, and founder and Director of the National Centre for Project Management (NCPM) in the UK. He has been named by the Association for Project Management (APM) as one of the top 10 "movers and shapers" in project management in 2008 and was voted Project Magazine's "Academic of the Year" for his contribution in "integrating and weaving academic work with practice". Following industrial and consultancy experience in managing IT projects, Professor Dalcher gained his PhD in Software Engineering from King's College, University of London. Professor Dalcher has written over 150 papers and book chapters on project management and software engineering. He is Editor-in-Chief of *Software Process Improvement and Practice,* an international journal focusing on capability, maturity, growth and improvement. He is the editor of the book series, *Advances in Project Management*, published by Gower Publishing of a new companion series *Fundamentals of Project Management*. Heavily involved in a variety of research projects and subjects, Professor Dalcher has built a reputation as leader and innovator in the areas of practice-based education and reflection in project management. He works with many major industrial and commercial organisations and government bodies in the UK and beyond. He is an Honorary Fellow of the APM, a Chartered Fellow of the British Computer Society, a Fellow of the Chartered Management Institute, and the Royal Society of Arts, and a Member of the Project Management Institute (PMI), the Academy of Management, the Institute for Electrical and Electronics Engineers, and the Association for Computing Machinery. He is a Chartered IT Practitioner. He is a Member of the PMI Advisory Board responsible for the prestigious David I. Cleland project management award and of the APM Professional Development Board. Prof Dalcher is an editorial advisor for the *PM World Journal*. He can be contacted at d.dalcher2@herts.ac.uk.

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