Advances in Project Management Series[1]

Realising value out of Big Data through small data!

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Introduction

The purpose of this article is to show how small data can be employed to realise the full value creating power of Big Data using Value Management, the targeting, timing and alignment of change programmes to optimise stakeholder value.

One of the hot topics creating a great deal of hype at the moment is Big Data. Many people talk about it, work on projects related to it and attend sold out conferences on the subject. However, there is one question omitted from most discussion on the subject, how much value is Big Data actually adding to businesses? This paper proposes a proven approach, using Value Management to realise extraordinary value from Big Data by directing how it is applied using precisely targeted small data. We first define Big Data and articulate some of the common criticisms associated with it. We then separate the 'follow the herd' approach to adopting Big Data with the real challenges of exploiting the potential effectively. Finally, we explain the power of merging small data with Big Data in the context of stakeholder value creation.

Definition and Use of Big Data

We need to start by defining Big Data. According to Gartner, Big Data refers to high volume, high velocity, and/or high variety information assets that require new forms of processing to enable enhanced decision making, insight discovery and process optimisation. In a broader social perspective, Big Data refers to the idea that society can do things with a large body of data that that weren't possible when working with smaller amounts. Taking a more focused business view, Big Data is essentially used for two main purposes, internal operational performance and external customer knowledge, which fall under the general area of Business Intelligence.

Internal Operational Performance, like production measures, stock measures and sales forecasting involves capturing and analysing data relating to processes within the business, with the aim of making better decisions. This is generally done via a data warehouse solution. Most viable enterprises have some kind of business performance framework, such as a Balanced Scorecard (BSC) with measures, often referred to as Key Performance Indicators

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(KPIs). The BSC intends to provide a coherent view, thus the 'balanced' view of performance across the business so that the various functions, processes and roles can be aligned to achieve a defined vision.

Customer Knowledge, like loyalty information or behavioural information refers to data relating to customer behaviour with the objective of generating greater value for both customers, by matching products and services to their needs, and for the business through sales revenue and profit.

Traditionally data produced from advances in ICT have focused on ever more detailed reports on how the business has performed in the past. This is highly valuable for determining what has accounted for the current performance status, drilling down into the data to diagnose and correct specific issues and rolling up to provide an overview for reporting purposes.
Thus, these reports provide clues as to how businesses can improve their performance. However, the question remains whether Big Data delivers on the promises it makes, the additional value it supposedly brings?

So we need to ask a more searching, precise question: what additional value does the insight derived from Big Data, enable us to create? In order to answer this question, we need to know the capabilities and limitations of Big Data so that we can set our expectations and exploit the power of Big Data safely and effectively and thus create additional value.

Criticisms of Big Data

The criticisms regarding Big Data fall into three areas that are not confined to Big Data alone, but are endemic to data analysis. First, there are biases inherent in data; the creation of fallible bias by humans. Secondly, some proponents of Big Data have claimed that the mental and supporting physical models we use to explain how the business world works are obsolete. Thirdly, despite statistical techniques there is the risk of spurious correlation, associations that are statistically significant but have no underlying causal relationship.

All three criticisms have some validity and must be addressed if Big Data is to be exploited effectively. In Value Management bias is neutralised by incorporating multiple, often apparently opposing perspectives, invalid models are exposed through systemic models destruction tested to extremes and spurious correlations are eliminated through rigorous focus on true causality.

The approach to correct bias, invalid models and spurious correlations is called Precise Simplicity, defined as the simplest model and smallest dataset possible, which enables realisation of intended stakeholder value to achieve the purpose. It is within this context that small data are defined and applied. Precise Simplicity is one of the key concepts of Value Management; the targeting, timing and alignment of change programmes to optimise stakeholder value.

Delusion of Following the Herd

Another common pattern we see is where companies pursue Big Data driven by the technology hype. Focusing on speed, rapid ROI and a bottom up approach, most of these

initiatives lack clear purpose and direction with the result that little or no value is created. Some show promise but are not properly implemented and consequently never achieve the potential value for the business.

Creating business value is the challenge for Big Data projects. The main reason for that is that the Big Data projects don't know what insights they're looking for to support generating additional business value best. This is a long lasting issue with many companies. A key reason is that they don't have a clear insight in what components in their business generate real value and how this translates into the annual results. There is no precise business model blueprint. I can still hear a CEO of a major bank asking the question "We invest so much in IT and I'm still not clear on what exact value contribution it delivers?" Maybe the answer was even more worrying, as no real clear answer could be given other then "without it we couldn't run our business". The real challenge is therefore, like with many other hypes and trends, what would be the value for us?

How to Fail with Big Data

As said earlier, Big Data initiatives generally serve two purposes, one is internal and mainly aimed at performance of the company and the others are externally aimed initiatives aimed at customer behaviour and new commercial opportunities. When it comes to the internally focused Big Data projects, people display the tendency to move directly into the doing mode like "give me the report of this analysis?" This initiates a number of activities, for example creating a large data warehouse (MI) where all data is stored or brought together from within the company.

Various departments and managers then start to request reports, analysis and information (BI) which creates a tremendous amount of "projects to deliver" and very often with much overlap between requests. With limited resources, this results in a difficult prioritisation process and often also with general friction within the organisation, undermining the power of Big Data initiatives and trust staff have in the project delivering value. Even worse, in day-to-day operations the reports are hardly used, so waste is created. In a specific bank, 754 different reports were produced monthly. After a thorough investigation into use and purpose, it appeared that only 54 reports were actually used, and quite a few of these could be improved according to the recipients and users of the reports. So both in realising and operating a Big Data environment we see waste, rather than value, being delivered.

It is no different for Big Data initiatives that are externally aimed but for different reasons. Generally when it comes to Big Data initiatives aimed at customers, the initiatives start bottom-up and is aimed at internal data. In this process all sorts of insights are created that might or might not be relevant currently or in a later stage. In a bank we worked with on a business case on getting more value out of their cards business, we found a recent 250 page analytical document with all sorts of insights. When requested to use this information for the business strategy assignment, hardly any relevant information could be extracted from the document. Some insights were interesting but of no value for what they were supposed to support, business initiatives. So how can this be done better; how can we generate value?

The Power of Small Data

As we argued earlier, many Big Data initiatives (both internally as well as externally focused) result in a great many reports, and projects with very limited value to the business. So, how can we avoid unnecessary projects whilst creating relevant information and offerings to both internal and external stakeholders? This is where small data comes in. Small data refers to relevant, but very accurate data in the context of the strategy and day-to-day operations. Generally, most strategies are constructed on a corporate or divisional level while projects are implemented on a more operational level or day-to-day basis. The issue here is that value cannot be delivered if there is a disconnection between the strategy and the execution, which is so often the case in our experience.

Value Management marries the strategy and the execution. When translating a business strategy into a Big Data initiative from a Value Management perspective, we always start top-down in order to connect vision to the execution components in the most effective and efficient possible way. Value cannot be delivered unless it is clear which activities drive value. In between strategy and execution sits systemic modelling, a key part of the Value Management approach. System modelling is the core methodology we use to determine where value is created and/or destroyed in the business today. This clarifies which activities are important and generate true value for the business from which we derive the key value performance measures for driving the business. This is what we refer to as small data. Small data helps to establish what is valuable to do for a business. More succinctly, small data enables us to do the right things in the context of strategy.

Marrying small data and Big Data

As we have now established, Big Data tells you "who does what" either in the context of internal performance or external customer behaviour. Small data tells you what is important and valuable to do. So what would happen if we marry the two? The key drivers of value can be defined and quantified precisely and new initiatives compared with each other and the company's investment criteria to determine the most valuable in terms of targeting, timing and alignment against the strategy.

Conclusion

As said, Big Data does not create value in its own right. On the contrary, Big Data initiatives might lead to waste if not married properly with small data. The argument for Precise Simplicity is key in many business situations and particularly clear for Big Data investments. The questions of "Why you are in business?" (Mission) and "What does your business want to achieve in 5 years?" (Vision) are fundamental in order to frame the discussions, just as understanding the way the company operates today. Only when answers to these questions are clear can we answer "How can we achieve this?" In the majority of cases we have seen, a great deal of waste is generated as a result of not "Doing the right thing", simply by failing to answer the Why? and What? questions. Although there is some gain in experimental learning, this has only a limited value because operational execution is not causally linked to strategy. Conversely, with the Value Management approach one can establish the value

insights quickly and accurately, thereby increasing the certainty in your business performance.

Case Study: Major European Financial Services Company

In a specific financial institution we worked with, a vast amount of effort was put into attracting new customers. There were also initiatives to activate dormant customers as well as efforts to transcend "medium users" to become "high users". Whilst big data could establish exactly who was in which segment and who needed to be approached with which activity, it was a continuous struggle to set the priorities right and allocate resources to the projects and initiatives.

During the Value Management exercise, we first established the specific business model for the unit and categorized the customer groups by amount of usage of the service instead of by more traditional approaches as customer income or type of services active (gold or platinum card). This showed clearly that more frequent users were generating more revenue and that new customer acquisition was not only relatively expensive but also resulted in much lower revenue levels than existing clients. The conclusion was that the limited resources were best spent on existing customers, and within that customer base, greater valuable was possible through transcending medium users into high users, then dormant users into low users.

Once we clarified how value was generated, we used Big Data to establish who the dormant, low, medium and high users were and to how they behaved. Relevant projects and activities were then defined to drive value into the client base and as a result, into the business.

About the Authors

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Roel Wolfert is a change leader, strategist, innovator and senior international executive with more than 20 years of experience in disruptive innovation and strategic change. He's specialised in finding, creating and delivering measurable value to organizations. Roel enjoys helping organizations and executives to make a 'turn around' in their business (models) and a mind shift in their thinking and acting. Roel is an investor, entrepreneur, lecturer and performance coach. He is co-founder of VGrip and works on projects across different industries in Europe, whilst also guest lecturing in Value Management at HZ University of applied sciences.

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Roger Davies is consultant, trainer, author and speaker with 35 years' experience in transformational change. A Chartered Engineer, he began his career in manufacturing and, as a Chief Engineer with Plessey, led major Computer Integrated Manufacturing (CIM) programmes, the learning from which he integrated into Value Management as his Master of Business Administration thesis. He subsequently grew the value proposition for several large management consultancies, applying it across virtually every sector, both private and public, before founding Impact Dynamics in 2002 and, more recently, co-founding VGrip, a thought leadership company in Value Management. Roger is a Master Practitioner in NLP and provides Breakthrough Coaching. Currently, he is undertaking doctoral research in Value Management with the University of Bristol.