Achieving the Advantages of Big Data Investments

M.Sc. Industrial Engineering and Management

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Not only is the amount of digital data in the world huge, but also rapidly increasing. The IT revolution has increased our abilities to make use of the data – something companies have realised could be used to understand customers better.

Since the Second World War, the enabled mass distribution and mass production lead to large changes for retail businesses. What used to be local over-the-counter stores became large supermarkets and as a result of this – the distance between company and customer increased. Efficiency and profits soared but not without a cost in terms of lost customer orientation and actual understanding of the customer's needs and behaviour.

As time went by, the competition grew and success was no longer only determined by the size of the store, but seemingly of how customer oriented the company managed to be. The traditional way of meeting every customer was impossible because of the sheer number of customers. However, the collected data would play a huge part in the oncoming years of how to become customer oriented again.

The master's thesis *Business Advantages of Big Data Investments* (Bagge & Lännevall, 2015) investigates the outcomes of investments made to improve customer insights within retail companies. Even though the level of complexity within the companies on the market differs – all of them are conducting some kind of data analysis in order to get to know their customers better. Statistical methods and models are well developed and understood but their application and outcome is not well recorded. The tools consist of segmentation models and other ways to find patterns in customer behaviour on different levels.

There seems to be a gap between the strategic goals and the technological methods used in companies that consist of an inability of declaring the business advantages of the customer insight tools, and this is what the thesis is addressing. The thesis' purpose was set to create a theory-generating framework of investments in customer insights and its outcomes.

To create a framework of how to both visualise and describe the advantages of customer insight investments, the strategy was to first determine the business advantages companies had obtained by their different investments in analytic solutions. Some companies have very advanced systems that takes many variables into account whilst others still hold on to more traditional approaches. A case study of nine national and international retail companies was done in order to find the differences of advantages between them. The business advantages are hard to group by themselves as they

could be more or less inclusive and quickly forms an extensive list. The strategy to find the common denominators of the advantages was to find the natural structure in the previous research on the area. The main areas within the prior research were identified as theory concerning the *identification* of customers, *communication* with customers, *segmentation models* and methods regarding *prediction* of customer behaviour. These four areas were used as a base to find business advantages when the companies were investigated. As all advantages were found and allocated to their respective area of prior research – the search for the common denominators started. The emergence of business advantages, as seen in Fig. 1, could be traced back to its investment in customer insight tools, but could something in the middle act as a common denominator? As the case companies were examined, a pattern begun to emerge. The business advantages were often quite discrete, for example: "using transaction data to find customers with similar shopping patterns, and send offers to these". Behind this
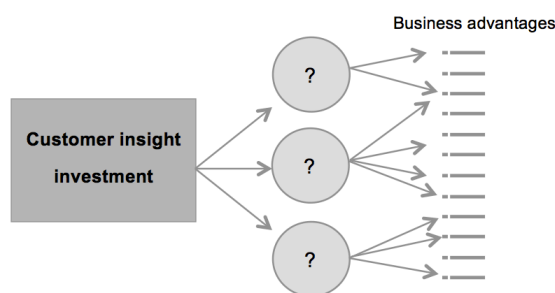

Fig. 1 - Searching for common denominators of business advantages

advantage, there is a capability that is the root to the advantage in the first place. The capability was the ability to perform a *data driven segmentation on transactional data*. This being one example, but the pattern

could be extended. The business advantages could be traced back to capabilities that the investments in customer insight tools were made and it seems to be consistent over the whole area. A customer insight tool leads to new capabilities that give a set of business advantages.

The nine capabilities were compiled into a non-exhaustive list that showed the occurrences in the different companies in the case study. The more advanced capabilities were apparent where more advanced customer insight tools were used. The result fulfilled the purpose of creating a theory-generating framework as the capabilities can be used to discuss different investments to become more customer orientated. The business advantages in the cases can be compared between similar companies and a strategic way of reasoning can be applied in order to create understanding for investments throughout the company.

Exploring more companies, both retailers and others, could be a possible extension of the results. If the order of how capabilities are obtained could be confirmed, the framework could be used for prediction of how large an effort should be - in order to reach the required capabilities of customer insights.

Bagge O. & Lännevall J. 2015. *Business Advantages of Big Data Investments – Data-driven Customer Understanding in Big Data Environments*. M.Sc. Lund University, Faculty of Engineering.