University of Groningen

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Kooge, Edwin; Verhoef, Peter C.; Walk, Natasha

Published in:
Research World

DOI:
[10.1002/rwm3.20324](https://doi.org/10.1002/rwm3.20324)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2016

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Kooge, E., Verhoef, P. C., & Walk, N. (2016). Merging data streams: The real challenge of big data. *Research World*, 56, 34-37. <https://doi.org/10.1002/rwm3.20324>

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MERGING DATA STREAMS

The real challenge of Big Data

Big Data is top of mind in many organisations because of the flood of data now available. There is a belief that analysing Big Data can bring substantial competitive advantages. However collecting and storing the massive data streams – although a challenge in itself – is only part of the story.

The ultimate question is how these new developments and possible competitive advantages can increase shareholder value. Our recent book *Creating Value with Big Data Analytics* (Peter Verhoef, Edwin Kooghe and Natasha Walk) addresses this topic via the Big Data Value creation model.

This article introduces that model which shows how Big Data can significantly contribute to value creation for customers (Value to the Customer, V2C) and for organisations themselves (Value to the Firm, V2F). V2C and V2F are at the core of the ultimate objective of shareholder value creation. This objective can only be realised by merging relevant data streams.

THE BIG DATA VALUE CREATION MODEL

The big data value creation model shows how merging data streams can realise value creation, one of the greatest challenges of big data. This model has four elements, each dealing with the complexity involved in the need to merge data streams:

1. Big data assets;
2. Big data capabilities;
3. Big data analytics;
4. Big data value creation.

BIG DATA ASSETS

An organisation normally has many assets, tangible (i.e. buildings, factories) as well as intangible (i.e. brands, customers, goodwill, products/patents etc.). Only in the last decades have organisations realised that the data they store in their CRM (Customer Relationship Management) systems or that they collect from external sources like market research have also become valuable assets. Especially by investing in the right data and making good use of these data it is possible to realise:

- a successful and cost efficient process for acquiring the right customers;
- valuable and sustainable relationships with existing customers;
- loyal customers, preventing them from leaving the company.

In an era of big data, the data itself is no longer rare and more and more

Edwin Kooghe is managing partner and **Natasha Walk and Peter Verhoef** are co-founders and managing partners at Metrixlab Big Data Analytics, the Netherlands.

types of data are available. In this perspective unstructured data is especially challenging due to its volume and the need for interpretation (for example sentiment analysis of Twitter data).

One could even argue that the data itself are no longer that valuable, as data are omnipresent and can be collected in multiple ways and are frequently publicly available to many firms. However, we also observe that for many firms which data sources they have or can get hold of is not obvious, also because just having data is not enough.

Specific challenges experienced around (big) data are:

- many data sources are fragmented and scattered in the organisation, thus not merged and integrated and often reported from different silos within the organisation;
- the flood of data, requiring a big data strategy to decide what to store, where to store and how to process these data;
- the rising awareness and concerns around privacy and

The real value of data is not in its mere presence but in the underlying capabilities to merge and exploit these data

security issues with storage and usage of data.

BIG DATA CAPABILITIES

The real value of data is not in its mere presence but in the underlying capabilities to merge and exploit these data – the glue that enables that big data together with other assets be exploited to create value.

Capabilities to be addressed are:

1. People: it is vital to have the right quantitative human resources in the different intelligence

departments and to educate them in this new area, being able to work with all available data streams and capable of deploying the right analytics to capture the value of the different data sources.

2. Systems: many systems are involved in collecting and storing the data sources. Due to the specific nature of new data sources (like the massive volume of unstructured data) new technology has to be integrated with existing legacy systems.

EFFICIENT ENABLE

Value extraction means focusing on defining the right markets and market segments to be active in as well as in realizing a fair market share and valuable brand.

3. Processes: necessary for storing, accessing and analysing data as well as communicating the outcome between analytical teams and (commercial) management. Privacy and security are important topics.
4. Organisation: the right structure to realise maximum impact on daily business with analytics – whether with separate departments or integrating the analytical function within the marketing & sales department.

However these capabilities also create specific challenges to be solved in order to succeed in creating value with merged data, like:

- Scarcity of talented data scientists, expected to grow in the coming years.
- Huge investment in IT systems and tooling, to capture, store and process all data.
- Scattered and increasing vendor landscape, imposing a difficult task in choosing the right (combination) of vendors.
- Having the right culture within the organisation, focusing on a sound

combination of gut feeling and intuition with a fact based analytical perspective within marketing & sales.

BIG DATA ANALYTICS

Within Big Data Analytics we distinguish between two different forms of analytics:

- Analytics focusing on gaining insights
- Analytics to develop models for improving decision-making

The insights are typically used for either making better marketing or sales decisions (for example showing that a new pricing strategy improves brand performance in the high value customer segment) or for defining actions and campaigns selecting the right target groups with the highest potential.

Analytics aiming to develop models for decision-making are meant to objectively automate (part of) the decision making process of marketers. They can be specific models addressing a specific

challenge (like predicting churn probability of customers) or more standardised models to improve the whole tactical marketing decision making, showing relationships between market, brand and customer performance and creating a holistic perspective on the effects of marketing decisions.

Furthermore, nowadays models are also used to build information based products, for example a recommendation algorithm for an online retailer.

Specific challenges around Big Data analytics are:

- The broad choice of analytics and techniques to be deployed;
- Creating 'need to have' analytical output instead of 'nice to have' output;
- The physical integration of all available data sources (including market research data) to show relationships between the relevant commercial KPIs (Key Performance Indicators).

We would like to explain this last point in depth. There are several possibilities for technically merging data sources at the deepest level – ideally at the individual level, and if that is not possible a common denominator should be defined at a higher aggregation level.

This process should be applied for every pair of data sets. In practice this would mean that the organisation would end up with a hybrid approach: some sources will be merged at the individual level and others at a higher aggregation level, for example, merging data at the segment level.

ERROR

An overview of typical data sources that might be relevant

	Value-to-Customer 😊😊😊	Value-to-Firm €€€
Market/category	Innovation research	Market sizing, descriptions & monitoring (like GfK, Experian, Telecom paper)
Brand	Brand tracking and Brand health studies	Sales data (like Nielsen or from CRM/ERP) brand equity research. Media spend, etc.
Customer	NPS, Customer satisfaction, loyalty, customer care, social listening data	CRM/ERP, transaction data, customer contact data

Adapted from: Verhoef, Kooge, Walk 2015

EARNINGS

CREATING VALUE

Since value creation should, in our opinion, be the ultimate objective of Big Data analytics, we distinguish between Value to the customer (V2C) and Value to the firm (V2F), meaning that organisations should focus on the balance between value extraction as well as on value delivery. V2C and V2F can be created at three levels: the market level, product/brand level and the customer level.

For value delivery, customer organisations should focus on specific consumer needs that can be identified in different markets. Furthermore it is necessary to build brands that create brand awareness, brand consideration and brand preference. Finally organisations should realise customer relationships with high satisfaction, high net promoter score and high referring intention.

Value extraction means focusing on defining the right markets and market segments to be active in as well as in realising a fair market share

and valuable brand. At the customer level it is necessary to acquire and retain valuable and loyal customers.

To be successful it is necessary to:

- define the right KPIs to measure the V2C and V2F performance of the organisation on the market, the brand as well as on the customer level;
- have a data strategy in place that helps assess the added value of internal data sources (CRM/ERP systems) or external data sources (like market research, social media, online data) in order to measure, monitor and influence the defined KPIs.

CONCLUSIONS

Merging data streams in the era of Big Data can significantly contribute to the shareholder's value of an organisation. To succeed, organisations should focus on value extraction and value delivery using the selected relevant data sources. To prevent drowning in all available possible internal and external data sources, a funnelled approach is

advised, selecting only necessary data sources instead of trying to collect all possible sources. Criteria for this selection process are mainly determined by the ability to measure the defined KPIs. Deploying the right analytics and having the necessary capabilities in place will be crucial for long term success in creating value from Big Data by merging data streams. **RW**

ENHANCE

This article is adapted from: Verhoef, Kooge, Walk, (2016), Creating Value with Big Data Analytics, chapter 2. Natasha Walk, Edwin Kooge and Peter C. Verhoef.