Marketing Analytics and Scope Big Data in Practice of Enterprises

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When we ponder a problem if marketing develops faster in area of science or of practice, if practice draws from scientific achievement of marketing if marketing draws from achievement of practice of enterprise, we should make a review of application a marketing analytics in enterprises.

Abstract

The aim of a paper is presentation of modern and the most advanced issues of a marketing analytics, which is defined by the scope of Big Data. An internet analytics or more precisely marketing analytics enables to perceive, to structure of monitoring of every level of change in an organization, what takes place in every modern firm with marketing orientation. The aim of this paper is also attempt of verification of a thesis, that structure of applied marketing analytics is complex and its application in large or small enterprises is different in individual firms and even trades. So practice and science are in progress parallel and technologies determines of development of marketing, various new kinds of relationships, interactions. Technologies lead to fast development of marketing, what is confirmed by a marketing analytics and applied new rates of marketing.

Keywords: Scope Big Data, Marketing Analytics, Analysis Of Internet Data, Managerial Cockpits (Dashboards), Case Study Method.

1. A marketing Analytics – Notion and Trends, Analysis of Internet Data

At the beginning we should quote definition alone of an analysis of Internet data. The Web Analytics Association proposed standard definition of an analysis of Internet data (http://www.webanalyticsassociation.org): an analysis of Internet data is objective tracking, creation of reports and analysis of quantitative Internet data in order to optimization of websites and Internet marketing campaigns [1]. The same definition was just proposed in 2006, what evidences how young this area is, although it began in 90.

In the light of this consideration we should also consider the statement made by R. Paszkiewicz in the paper "The inconspicuous charm of digital marketing", according to which "practice of digital marketing – it is procurement of knowledge in two areas" [2].

As IT specialist learn marketing, because thanks to it they evolve better systems, as marketing specialist learn making use of optimization of campaign, evaluation of results of campaign on out-puts level, analysis of data and electronic form of connection. So in modern business IT and marketing are realized hand in glove. In other words first area is skillful usage of digital media and tool to correctly create communications and target them to customers, examine demand and needs, fulfill whole process of sales, downright to service. In that case whole knowledge in marketing area stems from digital thinking, digital rules of conduct for example in a sales pipeline and in care of leads. The second area is technology, IT. Necessary is knowledge about construction of database, because without it we can't lead marketing analysis. Due to this connection between IT specialists and marketing specialists focus on consumer will be increase.

According to M. Jefferey [3] an analytical marketing we can understand as marketing, which is based on data and application of marketing rates, which, first of all, are used for monitoring of results of all main marketing activities. While M. Grigsby [4] stresses that a marketing analytics shows, how we can optimally use statistics, analysis and modeling for increase of effectiveness of daily marketing activities, starting for creation of target lists and segmentation of data for testing effectiveness of campaign and forecasting of demand.

However, we should state, that more extended scope of analytical marketing began in fact pursuant to more extended dimension of alone marketing. This more extended dimension of marketing consolidata as a consequence of the third industrial revolution, in which digital technologies, new ways of communication triggered e-commerce off. New concepts of marketing of value, relationships with customers, internet marketing and rates, which concern them are confirmation of one of stages of creation of paradigm and even creation of multiparadigm of analytical marketing [5].

2. Scope and Importance of Big Data

Big Data is a term, which describes big, changeable and diverse a set of data, which processing and analysis is very difficult, but it can cause to obtaining of new valuable knowledge. Of course, a term of big set of data is relative and means situation, in which a set of data can't be analyzed with the use of normal, simple and the most common ways and methods. Obviously, all depend on trade and level of multidimensional character of algorithm. Big Data describes also sudden increase and accessibility of data, both these systematized and these, which don't have rigorous and permanent structure. From this perspective range of data isn't an aspect, which determines the biggest significance, the most important are precise analysis, which give possibility of using of Big Data for taking firmer and reliable strategic decisions in this business [6].

Why are Bid Data so important in these days? Their value don't depend on how much we have data, but it depends on way of using them. Exactly correct and effectiveness using of owned stores of data can allow for competitive advantage on a market. Precise using of owned data can allow an organization, for example: decrease of costs, reduce time, which is spent on some activities, use of new product offers, take better, more well-thought-out and correct decisions in business. Connection of mass data with advanced analytics allow support business operations, find reasons for wrong work, defects in near real time, find reasons for damage, describe of level of risk and convert a risk of whole portfolio in a few minutes, detect behaviors, which can point at abuse before their disruptive influence in organization. So this combination is possible in dashboards.

Today organizations are able to use knowledge, which is comprised in Big Data and transform it into valuable information, which are essential for business success. So selection and analysis of needful data is so important in this process, because quantity of data and their components, which are produced in global range is simply overwhelming. Additionally we can stress that their quantity sill has increased, so "winners" are those, who in the best way will use streams of information and will implement them into their organizations [7].

Development of IT technologies, techniques of deep learning and computational techniques, in connection with development of statistical and econometric models, guarantees impetus for creation of an analytical marketing of new generation. So the modern diagnostic way of Big Data for an analytical marketing was showed very interesting (Fig. 1) [8].

Figure 1 shows, how large sets of diverse data are used in a marketing analysis, which is constantly expanding in scope and bringing benefits, especially to support long-term goals of a company. Examples of recent studies (illustrated in Fig. 1) also show, how to use new sources of digital data to develop business-specific approaches to a marketing analytics, that provide new, more accurate, more in-depth information.

Remark: the arrow in Fig. 1 shows the increasing importance of diagnostics depending on use of (mostly structured) internal data and (mostly unstructured) external data.
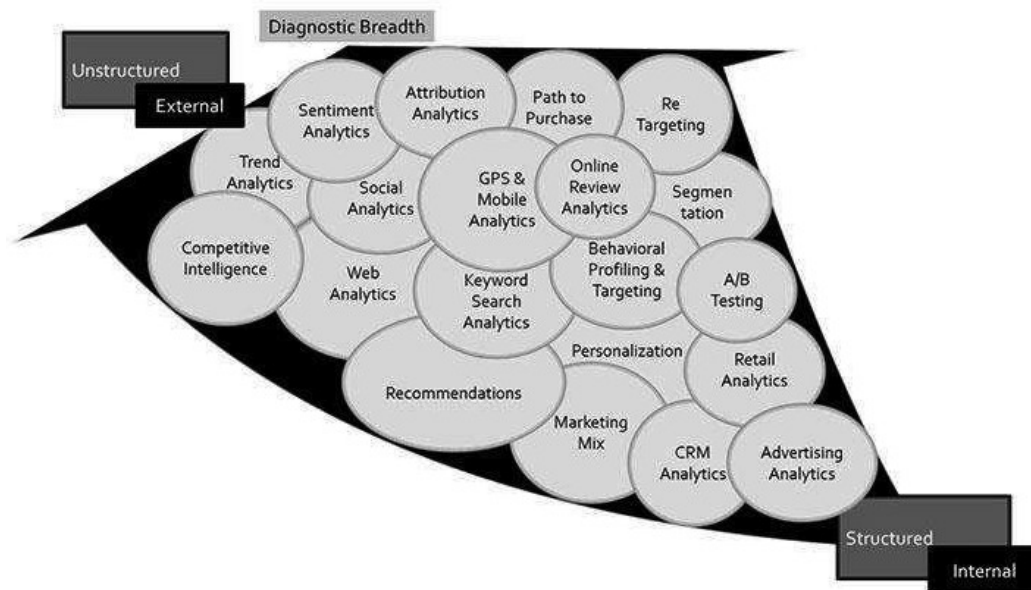
Fig. 1. Diagnostic way of using of Big Data for analytical marketing
Source: M. Wedel, P.K. Kannan, *Marketing Analytics for Data Rich Environments*, „Journal of Marketing” 2016, Special Issue, vol. 80, s. 109.

Organizations, by combining Big Data with an integrated marketing management strategy, can have quite a significant impact on certain elements. This combination can have a key impact on customer engagement; we can obtain information about the customer himself, who he is, what preferences he has, but we can also obtain information about his location and preferred ways of communication. Such information significantly improves processes at the organization-customer level, which may result in a more efficient way of generating leads and lead more potential customers to the final stage of the sales funnel, namely the purchase of a good. This combination can also have a significant impact on customer's loyalty and retention by the company, and extensive data can help to determine at what stage customers are discouraged and abandon the company's offer and will no longer return to it. The last level affected by the combination of Big Data with an integrated marketing management strategy is the optimization of marketing and its effectiveness. Data gives the opportunity to optimize marketing expenses and to continuously monitor and systematize marketing programs in channels using analysis, measurement or testing. So it can be concluded that data play a huge role in today's world. Thanks to them an advantage can be gained or even maintained. By means of precise analysis, we can gain meaning more than other units that have a similar range of data.

3. Integrated Strategic Analyses and Managerial Cockpits (Dashboards) – Case Study Method Research Results

Integrated reporting at DB uses integrated strategic thinking to identify sources of creation of value and their interconnections, thus helping to avoid the risk of information being taken into account in separate "fragments" and in multiple, disconnected and static communications. [9]. Integrated reporting at DB is a new approach to corporate reporting that aims to present, how the organization is organized and creates and maintains value by integrating financial and non-financial information in a clear, concise, consistent manner. Before we go into the results of in-depth case studies, it is worth to present the results of our own research on integrated strategic analyses, which allowed us to analyze such marketing strategies and determine online and offline marketing indicators for 11 companies. These indicators were presented by G. Błażewicz in his book Revolution of Marketing Automation. How to use the potential of

Big Data [10]. However, it is a presentation of contemporary indicators also concerning e-commerce. Coming back to the surveyed companies from the industrial and consumer goods market, the following types of classic ones - resulting from integrated strategic analyses (BCG, GE, MA, ADL, Hoffer) and new indicators - will be presented. Classical indicators are: market share index (ADL), profit index (BCG), sales volume index, innovation index (GE), sales share index (BCG), financial flow index, ROE and KE index (MA), competitive position index (Hoffer), product export index, sales value index, campaign effectiveness index. New indicators include: website visit rate, online sales profit ratio, online revenue ratio, customer loyalty ratio, production capacity ratio, profit size ratio on the Polish and foreign markets, innovation ratio, cost of acquiring new customers CAC, export volume ratio, TWR ratio, product quantity ratio, sales ratio on new segments, website entry rate. Classical indicators can be supplemented in detail by analysis of categories, which are at the coordinates of these matrices. The above indicators resulting from portfolio matrices have been included as classical indicators and new indicators have been added, which are intended to complement the previous ones. In addition, further indicators resulting from the growing scope of Big Data will be recommended after further analysis. The above indicators confirm the thesis that the structure of analysis is wider than that used by companies in the SME sector. **Therefore, it is possible to verify the thesis that the power of marketing analytics influence on financial results depends on the advancement of analytical orientation and analytical paradigm, and even on the processes of data and information acquisition and advanced analytics presented in dashboards in the following way management as well as analytical.** In the indicators presented above, we observe the marketing and financial interface, but it is only the application of the dashboard managerial cockpits method that allows us to present correlations and the formation of individual correlations in the past and to indicate the prognostic approach. As a result, thanks to dashboards we can see how the company develops and evolves. We need to track changes in the company through strategic and tactical dashboards that include monitoring and control indicators. This allows us to enrich and improve marketing strategies and increasingly strengthen its competitive position in the market. Dashboards can include several panels of key categories. The key categories are: customers, product, brand, advertising, PR, events and trade fairs, direct marketing, website research and online marketing, sales, sales channels, prices and discounts, collateral marketing, environment - micro- and macro environment. To sum up, the experimental dashboard becomes a contemporary mirror of the functioning of the company. The double strength of today is Big Data and indicators monitoring and analyzing strategic choices of the company through dashboard systems. The data presented in the dashboard allow for quick analysis at the level of media purchase, costs, indicators and user behavior - they are carried out necessary to close the value transaction. A full success can be said when the results of activities are combined with sales data.

The in-depth case study method was also used in the author's research, for which dashboards were developed, both in terms of financial and marketing results. Initial work on the construction of the dashboard started with a literature review of the subject and a bachelor's thesis was written by a practitioner running an Internet company. In the paper he presented the practical use of dashboard for a small company. The in-depth case studies, in turn, concern industrial companies that redefine their strategies, which can be seen in the dashboards developed. Trial visualization of one of the dashboards will be possible in the final version of the article. These companies, through the applied dashboards, implement integrated strategic management, i.e. they have evolved from integrated strategic analyses through marketing scorecard or BSC to dashboards. They show the interactions between the financial and non-financial dimensions of activity. Thanks to dashboards, both strategic and tactical, internal barriers to achieving strategic goals of companies are blurred, as well as

decision making, which embrace the achievement of value not only in the short term, but also in the medium and long term.

Case study ABC Company

At ABC Company, since 1998, customer satisfaction surveys have been conducted. The need for their implementation resulted primarily from the implementation and certification of a management system compliant with ISO standards. These measurements have also been useful in marketing activities The sample was chosen national group, the most significant for the company's customers. This list has been constant for many years, which is why there is a certain repeatability of the test results. The issues raised in the survey concern the key areas of the company's activity. These include consecutively numbered from 1 to 7 issues that are interpreted:

1. **The general image of the company as a supplier of filtering respirators.**
   In the general assessment of the largest clients, the company is highly rated. This may be the result of a large participation of the company in trade fairs, exhibitions and industry symposia, as well as strongly visible advertising in periodicals related to Occupational Health and Safety. During the year, customers with understanding came to a small price increase.

2. **Consideration by the wishes and expectations of the customer.**
   In the case of this parameter, account should be taken of the 2017 price reserve for products, as well as a very dynamic extension of offers for commercial goods. The customer is comprehensively supplied.

3. **The scope of the offer.**
   At this point, the offer of filtering half masks is evaluated. High marks obtained in recent years are the result of introducing new products or with higher protective parameters or a lower price. The ABC company is the largest Polish producer of respiratory masks. The company performs them in all filtration classes and two shapes. As a result, it offers the largest range of products that can differ not only from technical parameters, but also from packaging and marking.

4. **Timeliness of orders completion**
   The general, high evaluation of the timeliness of orders results from the high production flexibility of the company resulting from the small technical complications of the basic products. Changing the assortment manufactured at a given moment does not result in almost any production stoppages. The fall in satisfaction in order completion in 2008 and 2009 was the result of sudden jumps in market demand for filtering half masks as a result of the emergence of new threats in the form of SARS, bird flu or new influenza. Large production resulted in a prolongation of time from receiving the order to sending the goods to the customer. The result in 2017 is still great.

5. **Service in the form of trainings for clients**
   After 2013, when a significant decline in training assessment was noted, the result should be described as positive. The improvement of the graphic part of the presentation and the planned training plan will improve the assessment. On the basis of this parameter, it can be seen that the systematic work of the marketing department, the assumption of the need to conduct training has brought excellent results.

6. **The pricing policy of the company**
   Price is one of the most rated points by business customers. In the case of ABC, the recipients who are largely commercial intermediaries also evaluate the pricing policy. It is often about willingness or unwillingness to cooperate. The results achieved in the analyzed period are primarily the result of a stable pricing policy. This is not about

achieving the lowest prices, but about the certainty of their invariability during the year and the preservation of another offer for intermediaries and final recipients.

7. **Overall Rating maintaining relationships with customers**

At this point, customers evaluate the level of direct relationships with them. Achieving a very good result here results from the employment in the marketing department of employees with high personal culture who are able to listen to the client and talk to him not only on topics related to products.

For further study selected from among the above indicators are presented in Table 1.

Table 1. Selected statistically significant indicators.

	Sales revenues Correlation	Sales costs Correlation
The overall image of the company as a supplier	-0.8	
Timeliness of order fulfillment	-0.7	
The pricing policy of the company		-0.5
Number of recipients	-0.5	-0.5

Source: Own study

Let's look at "the overall image of the company as a supplier". The value it adopts in relation to the sales revenue is -0.8, which means that this relationship is very strong. So in this case, it means that the better the company's image, the lower the sales revenue. The next indicator is "punctuality", here as in the previous case the correlation value is very high (-0.7), so the more timely deliveries are made, the lower the sales revenues. At this point, it is worth looking again at the whole. Undoubtedly, a significant part of the analyzed indicators can be combined into indicators of the so-called soft, which are related to the flexibility of the decisions made. Negative correlation in relation to flexibility and a decrease in liquidity is quite obvious because most often the flexibility manifests itself: lack of debt collection, implementation of unprofitable or low-profit projects, and probably the most important - extended payment terms. It can also directly affect or result from the flexibility of the pricing policy, which has a direct impact on the revenues or costs that the company achieves in both the short and long-term. If the company competes on the market with the image as we can see, it can affect significantly on the achieved financial results. On the other hand, without a proper image, it would be difficult, if not impossible.

We should remember that an analytics is the ability to interpret data for which a human factor is essential. Narration in the description is necessary to fully deduce and draw correct relationships, trends or dynamics. Technology alone will not answer the business decisions to be taken, although the industry is working on building solutions for machine learning, and ultimately to use artificial intelligence for modeling or prediction [11]. The results and conclusions of these studies are included in the company's analytical dashboard.

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