

Yulia Kulakova

2nd year SS2 International Business (Master's degree)

The potential benefits of Business Analytics in the sector of financial services

„In God we trust; all others must bring data“

W. Edwards Deming

Introduction

The aim of this study is an analysis of the potential benefits of data-driven decision-making process in the sector of financial services. In order to achieve this goal, the study includes definitions of contemporary trends in business analytics, best practices of implementation the analytical solutions and insights from the experience of financial service providers.

Thanks to the rapid development of IT, today's enterprises have a wide range of tools to support and facilitate business processes as never before. Moreover, this development already has changed people's daily life around the world. On one hand, many routine tasks are easier to solve with the help of technological progress. On the other hand, such technological progress reveals previously unknown challenges. Perhaps, one of the main challenges is the rapid growth of data amount generated by humanity during recent decades. Some talk about the tremendous volume of data as a valuable asset and opportunities, others talk about the obstacles regarding to the amount of generated data. Obviously, the proper way is supporting both sides.

Although data-driven decisions can boost business processes from many aspects such as increasing profitability, reducing costs and optimizing the supply chain management. In this sense, today's enterprises have a great opportunity for sustainable growth and improving their performance. Data becomes vital and unique raw material for decision-makers. However, in order to be the key element in the decision-making process, data must be trustworthy, meaningful, authoritative and accurate. Data must provide a clear picture of the business, major trends, risks and opportunities.

1. Business analytics at a glance

Business analytics can be defined as an umbrella term for process of examining large amounts of data of a variety of types to uncover hidden patterns, unknown correlations in order to improve business process. However, applications in finance, supply chain, and marketing that take advantage of huge volumes of data have been in use for many years, employing statistical techniques and algorithms from the mid-20th century¹. What is different today is revealing of new opportunities accompanied by sharply declining cost of computer processing power and massive storage. One of the key elements in this definition is an enormous amount of various data. Precisely an enormous amount of data leads to revealing of Big Data term or Big Data & Analytics phenomenon.

Big Data & Analytics term becomes more and more popular during the recent years. Undoubtedly, Big Data & Analytics is a complex phenomenon that consists of two sophisticated modern trends. It is not that straightforward to define both, because many various definitions exist. Each of them should be considered with understanding of possible limitations. Big Data can be defined as a catchall term for the enormous amount of different types of data that does not fit into relational structured databases and cannot be analyzed by conventional tools². This term have been used to describe the data sets that are so large and complex that they require advanced and unique data storage, management analysis, and visualization technologies³. It is fair to say that Big Data is worthless in vacuum and it should be considered along with analytics⁴. Analytics term here stands for an extensive use of data, fact-based management for ongoing decisions and actions⁵. Big Data & Analytics as a set of technologies is already helping enterprises to extract insights from the data in order to achieve competitive advantage. Variety of enterprises from the wide range of sectors can benefit from these techniques, and they do.

Sectors like logistics and supply chain management, healthcare, retail, government, financial service scan benefit either. Indeed, with the help of Big Data & Analytics techniques, financial services organizations can improve their customer engagement and operational performance. Sure, firms in the financial services

¹ F. Acito, V. Khatri, *Business analytics: Why now and what next?*, „Business Horizons“ vol. 57, issue 5, September-October 2014, s. 565–570.

² T.H. Davenport, *Big Data at work: dispelling the myths, uncovering the opportunities*, Boston, Massachusetts, Harvard Business Review Press 2014, s. 2–10.

³ H. Chen, R. Chiang, V. Storey, *Business intelligence and analytics: From big data to big impact*, „MIS Quarterly“ vol. 36, no. 4, December 2012, s. 1166.

⁴ A. Gandomini, M. Haider, *Beyond the hype: Big data concepts, methods and analytics*, „International Journal of Information Management“ vol. 35, issue 2, April 2015, s. 137–144.

⁵ M. Manoochehri, *Data just right: introduction to large-scale data & analytics*, Addison-Wesley 2014, s. 7–18.

sector, like almost every organization, are under increasing pressure of vast amounts of data (Big Data). In 2011 the research company, IDC, had claimed in their report that the total amount of data created and replicated in 2011 would exceed 1.8 zettabytes - it is equivalent to a stack of books stretching from the Earth to Pluto and back ten times. Moreover, IDC forecasted 35 zettabytes of data by the end of 2020⁶. Enterprises around the world are seeking for ways to extract the value of data and financial services sector is not an exception. Insurance and banking firms are launching initiatives in order to engage customers in new ways, such as online and mobile applications. Social networks already help financial enterprises to track customer sentiments and feedbacks.

Many IT companies are struggling for Big Data & Analytics market. Most known are SAP, Oracle, Terradata, IBM, Microsoft and so on. Perhaps, the IBM Corporation keeps the strongest market position and company's offering scan serve as a good example. In particular, the IBM portfolio offers a wide range of analytical tools (Tab. 1).

Table 1. Four main flavors of business analytics

| | |
|------------------------|--|
| Descriptive analytics | Analyzing past events in order to receive an insight |
| Predictive analytics | Predicting the future events and the probability of what might happen in the future |
| Prescriptive analytics | Predictions of what will happen, when it will happen and why. Provides recommendations |
| Cognitive systems | Using natural language and machine learning to make a decision from fast-moving Big Data |

Source: Own study based on the official website of IBM Corporation, www.ibm.com [dostęp: 11.10.2014].

Table 1 shows the diversity of analytical approaches for customer needs, provided by IBM. Thus, today's enterprises, thanks to comprehensive analytics, can not only maintain daily decisions but even predict the future events, be aware and react respectively. In this sense expressions like predictive analytics are not just words or empty promises, it is a complex set of tools that consists from variety of statistical techniques and algorithms.

⁶ Official website of IDC, www.idc.com [dostęp: 10.10.2014].

2. Case study of insurance providers as users of business analytics

Pursuant to the goal of this study, the following analysis will consist from the best practices of one most respectful vendor of business analytics solutions, IBM Corporation.

IBM's sophisticated analytical approaches can transform financial and management processes in many ways. Extensive usage of Big Data & Analytics solutions can optimize offers, identify and mitigate fraud, manage cyber threats. There are many success stories how IBM's solutions improved performance in the financial services sector whatever banking or insurance. Some of them are truly impressive.

AAA Northern California, Nevada and Utah (AAA NCNU) offers a wide array of automotive, travel, insurance, financial services and consumer discounts to nearly four million members. Thanks to IBM's solutions, AAA accelerates the development of compensation plans by up to 66 percent while saving tens of thousands of dollars per year on annual plan updates. The solution dramatically helps to improve the performance of compensation calculation process in the organization. As a result, the company saved at least \$100 000 and four to eight weeks of work.

Allianz as one of the leading integrated financial services providers in the world is serving approximately 78 million customers in more than 70 countries. The company is the market leader in the insurance industry in Germany with a strong international presence. Allianz has implemented the centralized risk management platform with advanced analytics, provided by IBM. The solution helps to accelerate economic portfolio reporting by 99 percent, from six weeks to a single day.

Swiss Mobiliar is one of the leading Swiss insurance company founded in 1826 in Bern, Switzerland. Advanced analytical solutions, provided by IBM, help Swiss Mobiliar to execute 90 percent of queries 25 times faster and 50 percent of them 100 times faster. The company gains the benefits of private cloud solutions that help to reduce maintenance costs and complexity. From the business users point, IBM provided solutions help to deliver better services by reducing transaction response times by 20 percent. In addition, producing the sales report for the general agencies takes just one day instead of the week - 80% improvement.

The Swiss Re Group is a leading wholesale provider of reinsurance, insurance and other insurance-based forms of risk transfer. The company was founded in Zurich, Switzerland, in 1863. Swiss Re serves clients through a network of over 60 offices globally and is rated "AA-" by Standard & Poor's, "A1" by Moody's and "A+" by A.M. Best. Business users are demanding timely, reliable analysis to drive the business. In this sense, an accelerated report generation is a crucial advantage that benefits Swiss Re's business users. User satisfaction has increased

dramatically thanks to improvement of receiving reports by 70 percent faster — reports that took 10 hours are now available the same day. Because these reports contain key analytics that guide pricing and decision-making, the solution has the potential to sharpen the company's competitive edge moving forward. Deploying of IBM's solution is helping to anticipate rapid ROI (return on investment) within three to six months.

The Westfield Insurance company is one of the top property, casualty and surety insurers in the United States with 160-year history. The company received a rating of "A" or "Excellent" from A.M. Best, a global full-service credit rating agency. One of the Westfield's key corporate strategy is to invest in business intelligence as a part of the development of enterprise analytical capabilities. The company encouraged their employees to base their decisions on hard evidence by using data rather than intuition. This decision helps Westfield manage performance across its agency network: 95 percent of users agree that the solution improved their ability to evaluate agents. The company launched Analytics Resource Center in order to oversee business intelligence, analytics and data governance. Thus, Westfield's analytics platform provides a comprehensive high-level view across the entire business, helping senior leaders understand which regions, products and agencies are performing best, and where the greatest opportunities lie for further improvement.

3. Case study of banking sector

Banks and providers of payment services can definitely benefit from business analytics technologies. Business analytics can help to increase profitability and optimize risk management. IBM as a leading provider of business analytics solutions offers to banks and other financial institutions a comprehensive portfolio of business intelligence, advanced analytics, financial performance management and analytic applications. In brief, business analytics can help banks to address their challenges in several areas: improve customer profitability and marketing effectiveness; extract insights into financial and business performance of their branches; manage risks (credit, operational, market, reputation and so on); automation and flexibility of the management process with full auditability.

In a competitive landscape, banks as financial institutions should pay more attention for better understanding the sophisticated customer needs. It means that financial institutions should be concentrated on customer needs as a customer focused enterprise. Definitely, business analytics can help to deliver better customer satisfaction and feedbacks. Several insights from extensive implementation of analytics by financial institutions are given in Table 2.

Table 2. IBM analytical solutions in the sector of financial services

| Company | Industry | Business Benefits | Solution components |
|-------------------------|--------------------|---|---|
| Barclays | Financial services | Creation of a transparent forum for sharing ideas and global conversation between thousands of employees in order to improve business and customer experience. Using advanced analytics has highlighted 22 actionable topics. Helped to ensure global workforce stays aligned with customer-centric strategy. | IBM® Cloud-hosted InnovationJam® Application including COBRA and Many Eyes® discussion analytics tools from IBM Research IBM Content Analytics IBM Social Media Analytics IBM SPSS® Modeler IBM Global Business Services® IBM Jam Program Office IBM Research Other research tools used: IBM Social Pulse, Microcosm, HRL tool |
| BBVA | Financial services | Monitoring company's reputation online in order to deliver customer satisfaction and increase positive feedbacks. The solution analyses social media data from the various sources such as blogs, news sites, forums, social networks etc. This helps the bank to understand the client's needs, speed up responses, support marketing campaigns, improve decision-making process and strengthen online reputation. As a result, positive feedback about the bank increased by more than one percent, while negative feedback reduced by 1.5 percent. | IBM Social Media Analytics |
| MoneyGram International | Payment services | Increased ability to identify and interrupt potentially fraudulent transactions by 40 percent. More than US\$ 37.7 million in fraud was stopped. Reduction in consumer fraud complaints by 72 percent in one year. Scanning thousands of daily transactions and identifying potentially fraudulent activity was done without a noticeable impact on customer service. | IBM® InfoSphere® Identity Insight solutions IBM Anonymous Resolution IBM InfoSphere Global Name Recognition IBM InfoSphere Identity Insight IBM InfoSphere Information Server IBM InfoSphere DataStage® IBM Business Partner: Alpine Consulting, Inc. |

| | | | |
|--|--------------------|--|---|
| First Tennessee Bank | Financial services | Usage of analytics in order to shift from marketing-as-an-expense mindset to the idea of marketing as a true profit driver. Increased to 600% overall ROI through more efficient allocation of marketing resources. More accurate targeting of offers to high-value customer segments caused a 3.1% increase in marketing response rate. Optimization of targeting in most attractive-segments for specific offers caused a 20% reduction in mailing costs and 17% reduction in printing costs. | IBM® SPSS® Modeler IBM SPSS Statistics IBM Cognos® Customer Analytics |
| Pioneer West Virginia Federal Credit Union | Financial services | Automation of financial statement creation and regulatory reporting while enabling near real-time insight. Helps to decision-makers to understand and optimize Pioneer’s loan and deposit portfolios while providing a daily dashboard highlighting key financial indicators. Helps to reduce loan delinquency from 147 basis points to just 37 basis points inside five months, a historic low rate. Provides insight into merger opportunities and model for potential financial benefits of merging with other credit unions. | IBM® Cognos® TM1® IBM Cognos Business Intelligence |

Source: Own study based on an official website of IBM Corporation, www.ibm.com [dostep: 11.10.2014].

Table 2 shows success stories and useful practices of business analytics implementations in the banking sector. Indeed, business analytics can help banks constantly improve their understanding of product usage, profitability, risk, buying behavior and client financial needs. Using real-time events and customer data, banks can offer cross-channel marketing campaigns where “moments of truth” or key customer interactions, have capitalized to generate more revenue.

Conclusions

The financial services industry is going through unprecedented changes. Banking and insurance institutions should be ready to respond to today’s business challenges. Serious changes come from the customer side, changes in consumer behavior and needs. It is important for the industry to react quickly and appropriately in order to attract and retain customers. Customer loyalty is, perhaps, one of the most valuable asset of an enterprise no matter which size. Defi-

nately, modern customers are seeking for the financial institutions that can provide not only basic services but satisfy their sophisticated needs. Popularization of the internet services had created a new channel for advertising and marketing. In today's world, social networks become a convenient platform for marketing campaigns. Moreover, social activity in the internet generates a huge pool of various data that can be useful for the enterprises. Although an enterprise generates an enormous amount of data from their operational life.

However, the ability to extract the value from data becomes a crucial point for business process. This ability becomes more and more essential and vital in the competitive landscape. In other words, financial service providers that are able to analyze customer data, gain accurate insight and predict future trends definitely have a competitive advantage. To be frank, it is not easy to achieve the goal of being an analytical competitor. Unfortunately, many obstacles are in existence yet and best practices mentioned above demonstrate a consistent development in that area.

The cost and availability of new technologies are not the last issue, especially for small or even middle size enterprises. In this sense, business analytics becomes more affordable year by year. In many ways, IT departments within enterprises can leverage the data flow by using open-source technologies and achieve valuable results.

References

- Acito F., Khatri V., *Business analytics: Why now and what next?*, „Business Horizons“ vol. 57, issue 5, September-October 2014.
- Chen H., Chiang R., Storey V., *Business intelligence and analytics: From big data to big impact*, „MIS Quarterly“ vol. 36, no. 4, December 2012.
- Davenport T.H., *Big data at work: dispelling the myths, uncovering the opportunities*, Boston, Massachusetts, Harvard Business Review Press 2014.
- Davenport T.H., *Competing on analytics: the new science of winning*, Boston, Massachusetts, Harvard Business Review Press 2007.
- Gandomini A., Haider M., *Beyond the hype: Big data concepts, methods and analytics*, „International Journal of Information Management“ vol. 35, issue 2, April 2015.
- Kolb J.M., *Business intelligence in plain language*, Applies Data Labs, Chicago 2012.
- Manoochehri M. *Data just right: introduction to large-scale data & analytics*, Addison-Wesley 2014.
- Official website of IBM Corporation, www.ibm.com
- Official website of IDC, www.idc.com
- Zikopoulos P., Deroos D., *Harness the power of big data: The IBM big data Platform*, McGraw-Hill 2013.

Summary

Modern digital world has raised many obstacles along with advantages for business processes. Data generated by humanity every day is called now as Big Data, thanks to enormous amount and complexity of types. In today's reality of vast amounts of various types of data, it is important for enterprises to be able to deal with it in a most effective way. For financial services providers, decisions which are based on data rather than intuition can lead to many business benefits such as increasing awareness, boosting customer loyalty, diminishing fraudulence and gaining competitive advantage. Business analytics as complex process of data utilization can help financial services providers to address many challenges and reveal previously unknown insights. Rapid development of IT and consumerization of Internet can facilitate business processes as never before. Cost, complexity and availability of new technologies are playing crucial role in modern business world. In our days, business analytics techniques become more and more affordable even for small or middle size enterprises. Thus, contemporary analytics tools are deserve to be a key element of management process.

Keywords: data, business analytics, financial services, banking, insurance

POTENCJALNE KORZYŚCI Z BUSINESS ANALYTICS W SEKTORZE USŁUG FINANSOWYCH

Streszczenie

Nowoczesny cyfrowy świat wzbudził wiele przeszkód oraz korzyści dla procesów biznesowych. Dane generowane są przez ludzkość każdego dnia, co powoduje rozwój Big Data dzięki ogromnej ich ilości i złożoności typów. W dzisiejszej rzeczywistości bazującej na ogromnej ilości różnych rodzajów danych, ważne jest dla przedsiębiorstw, aby były w stanie sobie z tym poradzić w najbardziej efektywny sposób. Dla dostawców usług finansowych decyzje oparte na danych, a nie intuicji mogą prowadzić do wielu korzyści biznesowych, takich jak wzrost świadomości, wzmocnienie lojalności klientów, zmniejszenie liczby oszustw i zyskanie przewagi konkurencyjnej. Business analytics jako złożony proces wykorzystania danych może przyczynić się do poprawy efektywności działania dostawców usług finansowych w celu rozwiązania wielu problemów. Szybki rozwój IT i konsumeryzacji Internetu może ułatwić procesy biznesowe. Koszty, złożoność i dostępność nowych technologii odgrywają kluczową rolę w nowoczesnym świecie biznesu. Współcześnie, techniki business analytics są coraz bardziej przystępne nawet dla małych i średnich przedsiębiorstw. Tak więc narzędzia analityczne zasługują na to, aby być kluczowym elementem procesu zarządzania.