

Ćosić, Dijana

Conference Paper

Future Development of Customer Analytics in Marketing

Provided in Cooperation with:

IRENET - Society for Advancing Innovation and Research in Economy, Zagreb

Suggested Citation: Ćosić, Dijana (2016) : Future Development of Customer Analytics in Marketing, In: Proceedings of the ENTRENOVA - ENTERprise REsearch InNOVATION Conference, Rovinj, Croatia, 8-9 September 2016, IRENET - Society for Advancing Innovation and Research in Economy, Zagreb, pp. 188-195

This Version is available at:

<https://hdl.handle.net/10419/183716>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



<https://creativecommons.org/licenses/by-nc/4.0/>

Future Development of Customer Analytics in Marketing

Dijana Ćosić

EOS Matrix d.o.o., Croatia

Abstract

Customer Analytics is a fairly new part of business analytics. It has brought new, granular approach to customers. Since it is developing along with technology, a lot has changed since its beginnings in the 60's and 70's. As marketing relies on customer analytics, it is important to know where the analytics are heading and how marketing can benefit from it. The goal of this paper is to show the possible future development of customer analytics in marketing. It is going to be achieved by an extensive literature review on this topic, with the focus on the latest findings in these fields.

Keywords: customer analytics, marketing, development, technology

JEL classification: M3, C00

Acknowledgments: Prof.dr.sc. Mirjana Pejić Bach for inspiration and support.

Introduction

In the age of information technology and large volumes of data that is obtained from various sources in order to improve customer relations and business management in companies, it is important to keep up with the trends in analytics. One important part of Business Analytics (along with the Operations Analytics, People Analytics and Accounting Analytics) is Customer Analytics.

Customer Analytics has been around since the 1960's and 1970's and it has brought a new granular approach to customers. So what is Customer Analytics?

"It refers to the collection, management, analysis and strategic leverage of an organization's granular data about the behavior(s) of its customers". (Gans et al., 2016) It can be characterized as: inherently granular (focus is on individual-level behavior), behavioral (primary focus is on observed behavioral pattern(s), forward-looking (an orientation towards prediction), broadly applicable (a customer could be a user, client, visitor etc.), multidisciplinary (computer science, statistics, marketing, information science, etc.), and it combines behaviors from multiple measurement system.

Customer analytics is an intersection of technology, data and statistics. Companies now not only get the data from traditional market research methods such as focus groups, surveys and in depth interviews, but from neuromarketing, mobile surveys and self-report as well. They are tracking customers via mobile devices with geospatial location. They are using statistics, data mining and machine learning. There is also the data from the World Wide Web available (social networks and Internet communities). All this data can be combined with the point of sales data, demographic data and the data that a company owns about its customers, to predict and prescribe how to keep a customer, turn infrequent customers into loyal ones and overall make better business decisions especially in marketing.

Marketers can develop more personalized offers and give location based promotions on mobile devices.

There are descriptive, predictive and prescriptive customer analytics. Descriptive analytics are finding the patterns and relationships in historical and existing data. Predictive analytics predict future probabilities and trends to allow what-if analysis. Predictive analytics is about recency, frequency and monetary value. It allows marketing to recognize the long term value of the customer relations. Prescriptive analytics deal with deterministic and stochastic optimization to support better decision making (Ganset al., 2016).

In the following text I present the development of customer analytics as to clearly present its dependence on technology and how it is used in marketing today. I also present several indicators of possible development and trends in the areas related to customer analytics (technology, research, marketing and commerce).

Development of Customer Analytics

Analytics have been used in business since the late 19th century (Blake et al.), but it gained a lot more attention in the 1960's with the introduction of computer decision support systems.

In the 1950's with a store level data companies could answer questions like: How do store level prices relate to sales? What is the effectiveness of coupons? What is the impact of in-store promotion on sales? Etc. But they could not do customer analytics.

In the 1960's and 1970's, direct mailing changed the business analytics. It was mostly household analytics, as the marketers knew what a household has bought. They could control which catalog or flyer or brochure to send to each household. They knew the reaction to it. They could send a certain type of advertising but they didn't know what was bought outside of the company. They could relate prices, to category and shopping behavior (they knew prices in their catalog). Measurement of the impact of frequency and timing of catalogs on purchase behavior was also possible at that time. They could run experiments, vary things and build models.

In the 1980's a modern marketing science was born by introduction of scanners in stores. It was also a beginning of loyalty programs which, together with credit cards gave data about their customers. It was a beginning of linking customer behavior over time.

In the 1990's and 2000's Internet arrived. It changed the face of marketing. Besides Internet sales, companies are now able to track what customers are looking at and deliver the ads in a contextual way. The companies now know what customers are considering and what they didn't buy. They are collecting data on customer's intentions. They compare the data on what customers wanted to buy with what they actually bought, so as to get insight into planned and unplanned purchases.

With eye tracking data companies know where to place a product on a shelf. For example, 80%-90% of the shoppers are women and their average height is 5.6 foot and that is the perfect height to place a product – on the eye height. (Gans et al., 2016) If customers looked at the product more than once, the more they remember seeing it. The more they saw the product the more they consider buying it. (Chandon et al., 2009) Recall and consideration are much more affected by more views than choice. If data on planning a purchase was included, companies can measure planned and unplanned purchases by what the customers actually bought. The studies show that 60% of the things bought were not planned and 40% of planned things were not bought. (Gans et al., 2016)

Back in the 2009 and 2010 companies collected shopper path data and a radio-frequency identification data. Now there is cell phone data and geospatial location of customer. Now the customers can be traced inside of store simply by connecting to WiFi of the store and their purchasing data can be linked to their shopping path. Based on that, products can be placed in different parts of the store and different shelf space and customers can be targeted even better with products and services.

Larson et al. concluded that, for example, most shoppers go down the aisles just once. Most customers cover only about 25% of the store. Companies now can segment certain types of shoppers, by efficiency, travel deviation. If the demographics were added – they could target those customers by for example rural vs. urban (Larson et al., 2005).

Companies now know a customer is standing in front of their store when they pick up a WiFi signal from a store. They can look at the data about what customers are looking at (eye tracking), what reactions were triggered in their brain when doing so (mobile EEG) and that can be linked with the way the customers move through the store (geospatial location). (Gans et al., 2016)

The Internet allows companies to link past behavior through customers' IP address and cookies, drop loyalty programs. They are looking at last click attribution: what was the last thing a person saw or heard before making a purchase. It is important to understand the entire path of things the customers are seeing. Web site data includes the data on what websites a customer has visited and time he/she spent on that website. (Hegarty, 2016) It is also important to link online and offline data because of show-rooming (people are looking online and buying offline and the other way around). Linking is done through loyalty programs and coupons. (Gans et al., 2016)

What are the leading companies doing at the moment?

One example of innovative data collection is what Kohl's Department Store is doing with geospatial location of the customers. They are using a Wi-Fi network to locate a customer in the store and, if they have a data on the IP address of the specific customer that was visiting their web, they offer a discount to the customer at the moment when he or she is at a specific location at the store. (Skelton, 2014)

Netflix is doing data mining to actually create content. They know what shows/movies each customer is watching and they create meta tags (which enable Netflix to see which shows/movies go together), so they are able to create new content accordingly. (Bulygo, 2013)

American Express is one of the companies that is doing text mining to create churn models. Social networks are strong predictors on who is going to churn. (Malthouse et al., 2013) They are scrapping data from the World Wide Web about their customers and turning it into numerical churn models.

Starbucks is using analytics to give deals to people who are on the brink of being loyal. They want to turn disloyal or infrequent customers into frequent ones. (Gans et al., 2016)

Call centers are merging natural language and intonation software with CRM systems and database management to create scripts that are telling the agent how to handle the customer or even redirect a call to the agent that is better with handling angry customers. (Riahi et al., 2015)

Amazon can predict what a customer is going to buy in the future and have the item shipped to the nearest local retailer before it is bought, so as to be able to offer the same day delivery. (Gans et al., 2016)

Methodology

The methodology employed in this paper is based on data gathered from several relevant sites on the Internet. Figures and data shown are obtained from market research companies (Cambiar and Marketing Sherpa), email marketing companies (Adestra and Emailmonday) and digital marketing companies (EMarketer).

Cambiar's online survey was administrated in 2014. And the results were presented in 2015 annual research report. It included 285 leaders, of whom 104 were buyers and 181 suppliers¹. EMarketer² made a forecast in 2014 based on multipronged approach that includes the trends from the economy, technology and demographics from worldwide data. Marketing Sherpa³ in 2015 asked 2.057 American adult consumers in which ways they want companies to communicate with them. Adestra conducted the research in 2016 by gathering data from MessageFocus campaigns sent worldwide. The 9th annual Email Marketing Industry Census based its figures on a largest U.K. survey of email marketers (more than 1000 respondents). Email monday is one of the largest collections of statistics on the topic of mobile Internet where the results a study conducted in 2011 by EDialog can be found.

I explore several indicators of possible development in marketing and customer analytics. The data presented are: trends in analytics and market research, Internet and mobile growth, trends in email client usage, trends in email marketing, customers' preferred communication with companies, trends in email client usage and trends in e-commerce.

Results

Figure 1 shows expected Internet and mobile users growth by 2017. It is clear that it is a growing trend for both Internet and mobile phone users. Email is leading by 72%, followed by the postal mail (48%), television (34%) and print media (newspapers, magazines) – 31%.

Figure 2 shows the focus of Cambiar market research clients and suppliers (USA) in the next five years. It is evident that data analytics/mining and integration of multiple data streams (both expected to rise by nearly 80%), digital ad optimisation, customer experience, path to purchase and digital focus groups (increase of nearly 50% - 60%) are gaining the importance at the expense of brand tracking, copy testing, attitude and usage, ad tracking, pack testing (decrease of around 40%) and face to face focus groups (decrease of 60%).

Adestra⁴ shows the trends in email client usage where mobile has taken the lead in front of desktop and webmail (57%, 24% and 19%).

The 9th annual Email Marketing Industry Census gave an interesting view of the trends in e-mail marketing. Marketers predict that in the next 5 years, emails will be fully integrated with other marketing channels (84% of the respondents). Only 9% believe that emails will be made redundant. 76% believe that email communication will be completely personalized; 74% believe that email will still be one the highest channels for delivering ROI⁵.

¹http://media.wix.com/ugd/e94d21_00e8506d803c4386828bea765f10d3d3.pdf

²<http://www.emarketer.com>

³<http://www.marketingsherpa.com/article/chart/customer-communication-by-channel>

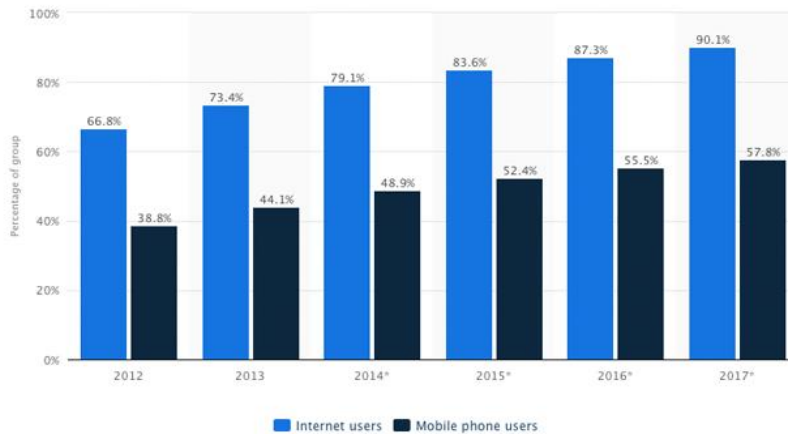
⁴<http://www.adestra.com/resources/top-10-email-clients/>

⁵<https://econsultancy.com/reports/email-census/>

The preferred types of mobile email messages (by Edialogin 2011) are special offers dominating with 27%, promo vouchers and real-time delivery tracking are following with 21% each. New products take only 15% and newsletters 12%⁶.

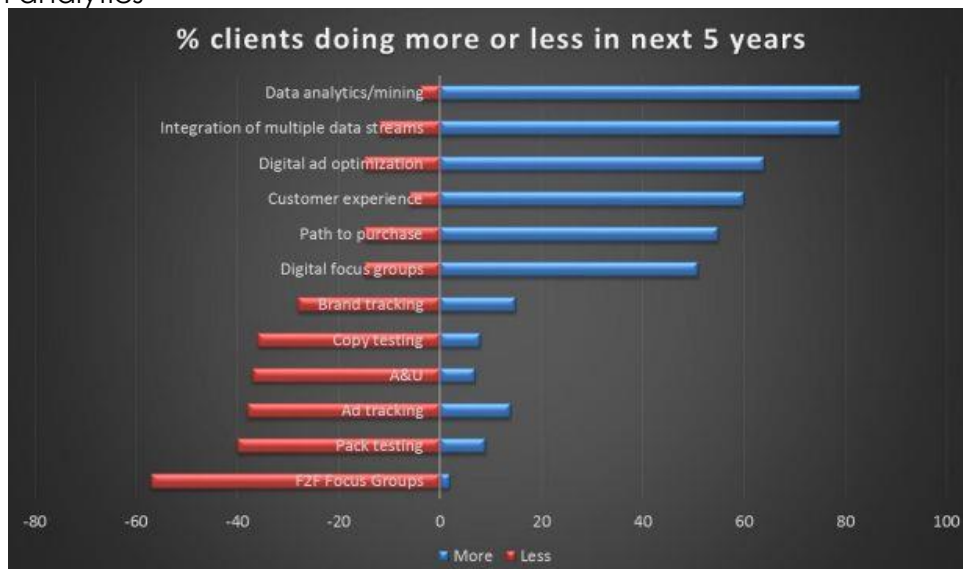
A growing trend in B2C commerce by 2017 is presented in figure 3. B2C ecommerce sales are expected to hit \$2.357 trillion.

Figure 1
Internet and Mobile growth by 2017



Source: Emarketer, 2014

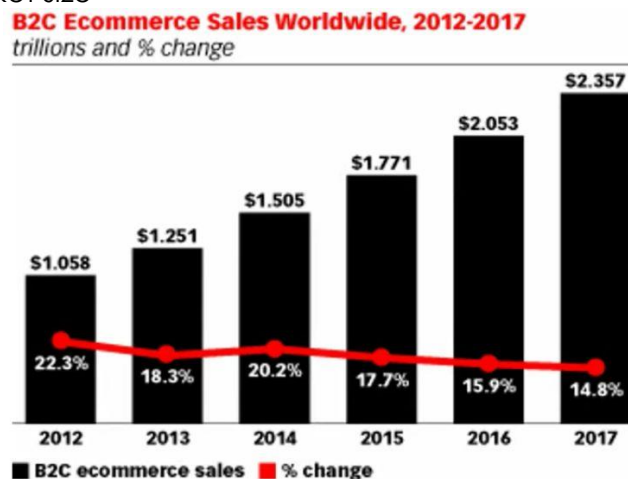
Figure 2
Trends in analytics



Source: 4th Annual Future of Research™ Report, Cambiar

⁶<http://www.emailmonday.com/mobile-email-usage-statistics>

Figure 3
E-commerce – Market size



Source: E-marketer2016⁷

Discussion

From the results presented in this study, it is visible that the number of Internet and mobile users will be growing in the next 2 years. In 2015, 50% of the Internet connections were made through mobile devices and 46% of the world population is on the Internet (Hegarty, 2016). B2C e-commerce is expected to grow as well. Mobile wallets and mobile payment apps are also becoming increasingly popular. It all suggests that digital marketing is not going to be made redundant yet. Customers are much more aware of what they are buying today, as they are socializing and exchanging their experiences over the World Wide Web and especially via social networks. So web analytics and social media analytics are expected to grow and meet the growing demands of customers.

The future of digital, especially of the email marketing lies in understanding the customers' preferences. Mobile email will account for 15 to 70% of email openings⁸so marketers should concentrate on email communication with their clients, be aware of mobile phone penetration and adapt their communication for mobile usage. Marketers should also acknowledge the customer's preferences when doing so as by 2020.it is expected that there will be 50 billion networked devices.⁹Mobile marketing will be even more important. Building trust with the customer is the key to the success of digital marketing (Hegarty, 2014). Companies need to listen to their customers in order to develop personalized marketing based on the customer's preferences such as the time, frequency and type of messages being sent to them.

A study by Leger Marketing (2012) for SAS Canada discovered that 60% of Canadian respondents would like to receive more personalized marketing but half of the respondents said that they stopped buying products and services because of the poor marketing, so marketers should be aware of this. The second important key to building a trustful relationship with the customer is the simplicity and ease of the customer's engagement. The fewer steps and the easier engagement – the trustier relationship (Dow, 2013).

⁷<http://www.emarketer.com/Article/Global-B2C-Ecommerce-Sales-Hit-15-Trillion-This-Year-Driven-by-Growth-Emerging-Markets/1010575>

⁸<http://www.emailmonday.com/mobile-email-usage-statistics>

⁹<https://www.accenture.com/us-en/insight-accenture-mobile-world-congress-2016#>

The Future of Research Report in 2015 by Cambiar, shows that the clients and suppliers in the USA market research are shifting importance from traditional methods (focus groups, brand and advertising tracking, attitude and usage studies, copy testing, pack testing) to digital (quantitative and qualitative), analytics and integration of multiple data sources. They want to better understand mobile, big data, social media, emotions and co-creation. Emerging "watch-outs" are micro surveys, followed by behavioral economics, gamification, prediction markets, neuroscience/biometrics, virtual 3D shopping¹⁰.

In the near future we can expect a lot of innovations in technology and together with it the further development of customer analytics. For example, Google has been working on driverless cars¹¹. If Google makes a partnership with retailers, it might offer a free ride to a store based on customer lifetime value when it sees that a customer has started shopping online.

Conclusion

The goal of this paper is achieved in two ways. I have presented the development of Customer Analytics and showed how it depends on the development of the technology. I have presented the data that indicates the possible future development of both customer analytics and of marketing. Limitations of this study are very dispersed data over several industries, with different methodologies and sources. For example, Adestra warns of automatic image blocking that could have led to over- or under-represented data. Having in mind the limitations of some of the studies presented in this paper, as well as a large number of predictors for future development, the future research could either focus on a certain type of marketing (such as: email marketing, social networks marketing, mobile marketing) or include different predictors of the customer analytics' development.

References

1. Blake, A. M., Moseley, J.L., "Frederick Winslow Taylor: One Hundred Years of Managerial Insight", *International Journal of Management*", Vol. 28 No. 4 Part 2, pp 346-353.
2. Bulygo, Z., (2013), "How Netflix Uses Analytics to Select Movies, Create Content, and Make Multimillion Dollar Decisions", available at: <https://blog.kissmetrics.com/how-netflix-uses-analytics/> (5/15/2016).
3. Chandon, P., Hutchinson, J.W., Bradlow, E.T., Young, S.H., (2009) "Does In-Store Marketing Work? Effects of the Number and Position of Shelf Facings on Brand Attention and Evaluation at the Point of Purchase", *Journal of Marketing*, vol. 73, No. 6, pp 1-17.
4. Dow, C., (2013), "Mobile Marketing and the Value of Customer Analytics", *International Journal of Mobile Marketing*, vol. 8, No. 1, pp 117-120.
5. Gans, N., Savin, S., Veeraraghavan, S., Berman, R., Bradlow, E., Haas, M. (2016), "Customer Analytics", available at: <https://www.coursera.org/specializations/business-analytics> (1/15/ 2016).
6. Hegarty, R., "Digital Marketing", (2016), available at: <http://www.shawacademy.com/marketing/course-details.html> (3/7/2016).
7. Larson, J.F., Bradlow, E., Fader, P., (2005.), "An Exploratory Look at Supermarket Shopping Paths", *International Journal of Research in Marketing*, vol. 22, No. 4, pp 395-414.

¹⁰ http://leger360.com/admin/upload/publi_pdf/reen20160307.pdf

¹¹ <https://www.google.com/selfdrivingcar/>

8. Malthouse, E.C., Haenlein, M., Skiera, B., Wege, E., Zhang, M., (2013) "Managing Customer Relationships in the Social Media Era: Introducing the Social CRM House", *Journal of Interactive Marketing*, vol. 27, No. 4, pp 270–280.
9. Riahi, A., Ristock, H.W.A., (2015), "Customer portal of an intelligent automated agent for a contact center", Publication number: US20140270109A1, available at: <http://www.google.com/patents/US20140270109> (3/15/2016)
10. Skelton, B., (2014), "Life Cycle Approach to Powering Geospatial Data Management", *Geospatial world*, vol 04, No. 10, pp 52-55, available at: <http://geospatialworld.net/magazine/viewEdition.aspx?magid=444> (3/15/2016)
11. Todri, V., Adamopoulos, P., (2014), "Social Commerce: An Empirical Examination of the Antecedents and Consequences of Commerce in Social Network Platforms", paper presented at Thirty Fifth International Conference on Information Systems, Auckland, available at: <http://pages.stern.nyu.edu/~padamopo/Social%20Commerce.pdf> (1/15/2016)

About the author

Dijana Ćosić graduated at Faculty of Economics and Business (University of Zagreb) in 2006. She has published three papers on data mining in healthcare management, neuromarketing in market research and dashboard usage for business intelligence. She began her career on RTL Croatia as a database administrator in 2006. She has worked as a data analyst in market research for 5 years (Valicon d.o.o. and Hendal d.o.o.) and as a customer intelligence specialist in Tele2 Croatia for four years. Presently she works as a data analyst in EOS Matrix. Her interests are analytics, data mining, neuromarketing, market research. The author can be contacted at dijana.cosic@gmail.com.