How Behavioral Analytics Can Help Business?

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Abstract

Behavioral analytics is significant amongst the most technological innovations. Behavioral analytics have the ability to change the manner in which business associations utilize individual's behavior data to analyze and change them into profitable insights. This paper explains the (a) implementation and impact of behavioral analytics in security and marketing, (b) tool which is widely used in security and the pros and cons of the tool, (c) case study of Netflix, (d) limitations of behavioral analytics. The central claim of the paper is that because of the ample amount of data available today and with the right implementation, behavioral analytics can help businesses in various ways. Behavioral analytics can help in boosting organizational security and predicting consumer behavior which helps marketing strategies. This paper concludes that behavioral analytics examines data as a whole from all the areas which enable businesses to have non-biased information and protect an organization from internal and external threats. Data by behavioral analytics is used by analysts to make competitive strategies and better product

Keywords: behavioral analytics, security tool, marketing strategy, user behavioral analytics

How Behavioral Analytics Can Help Business?

In the present age, the analytics space is flooded with tools and data to analyze user behavior. Behavioral analytics is an instrument that discloses the moves clients take within a digital product. With the ample amount of data available today, with the right implementation behavioral analytics can help businesses in various ways. Behavioral analytics can help in boosting organizational security and predicting consumer behavior which helps marketing strategies. (Miles, 2014)

Behavioral analytics originates from the need to know how, when, and why individuals interact with website, online games, mobile apps and other electronic. Behavioral analytics helps to investigate what clients like and dislike. By using this type of analysis-products can be modified and improved. Behavioral analytics allows businesses to predict consumers likely future behavior with a high level of accuracy. Businesses can have the upper hand in the market by optimizing the purchase cycle. Behavioral analytics combines user segmentation and event tracking to give a complete customer profile. This feature distinguishes behavioral analytics from other types of analytics. It binds the customer to the occasions they trigger to deliver a guide of their activities, known as customer journey. Customer journey can help the marketing teams to segment clients and run reports which will lead them to launch strategies, product development and marketing products better. (Hendricks, 2017)

There are two types of data to be collected and analyzed: structured data and unstructured data. Structured data consists of basic attributes such as username, gender, age, education, income, etc. and user behavior attributes which are viewing behavior data, call log data, and web browsing behavior data. Whereas, unstructured data consists of the text reviews data, video

image data, etc. To maximize the advantage, it is important for organizations to analyze the unstructured data. Investigating customer behavior may include basic dashboards, building all-encompassing client profiles, segmenting client bases, which comprises sorting out perceptions into at least two groups that are totally unrelated based on a blend of factors. These insights are possible only if businesses look beyond traditional metrics like page views and start analyzing unstructured data. (Zhang, Wang & Chai, 2015)

Employees have access to the company's internal sensitive data that's why companies need to protect themselves not only from external cyber threats but also dishonest employees' actions or third party. Behavioral analytics gives companies end-to-end surveillance to address the operational and legal risk. It helps companies in monitoring and investigating dishonest employees and detect the theft of critical digital assets. This is done by establishing a normal baseline usage behavior and detecting when anomaly occurs. Moreover, it gives management overview by deploying customized easily to use interface that aggregates a large amount of data which helps in identifying risk areas and performance opportunities. It requires companies to collaborate within all segments, that will serve as to develop the business rules for the prevention, monitoring activities analyze output and give feedback to improve the surveillance capabilities. (Hill, 2017)

Behavioral analytics enables marketing agencies the ability to provide give the up and coming age of analytics to their customers, and it enables in-house groups to convey results beyond their current capabilities. It also helps differentiate themselves from traditional marketers. Behavioral analytics helps to pitch a new product to new customers, without upsetting the existing customers. It will help to grow the revenues of the existing customers and give them a competitive advantage. (Greenberg, 2017)

Impact of Behavioral Analytics on Security

The pressure on businesses to keep their data shielded from different kinds of threats increases as businesses today develop more close connections with all their stakeholders through interest and wide range of mediums. Among all threats, the insider threats are most hard to distinguish and guard against. The capability of behavioral analytics is very impressive from a security viewpoint. Businesses are increasingly deploying behavioral analytics as their cybersecurity strategies. Businesses need to have the capacity to comprehend data to give a more integrated and insightful perspective inside the company which is very important to keep the company integrated. Behavioral analytics links the technology and individual data which limits the extent of handling large amount of data to identify and nullify threats and also predict and establish future blunders. (Marlin & Walden 2016)

For any business, it is important to monitor the three domains: the network, the user and the assets. In order to comprehend and outline typical behavior, it is important to apply behavioral analytics to each domain independently. With the help of behavioral analytics, an organization can build up a comprehension of how commonly certain procedures and applications on a device are utilized, as well as who uses the assets and how regularly and what different devices the assets are connected with. Once the baseline is determined, behavioral analytics can signal on statistical abnormality and examine why such issues are occurring. These learnings help the organization to update the network which leads to a more efficient system. (Bay, 2017)

In security applications, to boost the utilization of behavioral analytics, it is important to integrate all three domains behaviors together. By connecting the behaviors, analysts will get the

entire picture of what is happening in the organization and recognize odd action. In an information breach situation, it enables the organization to know what number of and which specific gadgets were jeopardized, how the aggressor got in, what information may have been taken from the system, to what extent the attacker was on the system, and what precisely should be cleaned. In order to advance analytics, it is significant to engage both supervised and unsupervised learning. In the case of supervised learning, the system is coded to analyze the particular kind of information, pattern that information, and search for inconsistencies outside of the standard. One of the downsides though is that little about the attacker can be obtained from this method. (Bay, 2017)

In the asset domain, in order to recognize the behavioral inconsistency about the amount of data which is regularly transferred, the system is coded to identify that particular data. It outlines the ordinary range and after that cautions when that standard range is surpassed. In any case, unsupervised learning is most important, yet more entangled. The objective for unsupervised learning is to demonstrate the hidden structure or appropriation in the information, in order to know more about the information. (Bay, 2017)

Basically, an algorithm is left among the information and it learns. Algorithm analyses all the information, sets up guideline, and after that searches for irregularities. Unsupervised analytics increase the value of security tasks since it generally automates the investing procedure and assists to find obscure questions. Like anything beneficial unsupervised analytics also require persistence and time to determine. A lot of inconsistency found might be harmless and outside the extent of security activities. The aim is to discover inconsistencies, with the assumption that among those inconsistencies there will be a bad action. When those bad actions are found they are transmitted so that they can help into more regulated behavioral analytics.

Basically, the unsupervised analytics make it all possible. So, applying one feature of behavioral analytics isn't sufficient. There are such a large number of factors and an excessive number of dangers. The genuine meaning of behavioral analytics must be the utilization of all three domains so that it finds issues rapidly before they have the opportunity to do any harm. (Marlin & Jarrell, 2016)

Behavioral Analytics Security Tool: UBA

The use of analytics is playing a vital edge now in security designs, Security frameworks give so much data that it's difficult to reveal data that genuinely demonstrates a potential threat. Analytics enables to comprehend the immense amount of information that security information and event management (SIEM), network logs, and different tools accumulate. (Johnson, 2015)

User behavioral analytics (UBA) is one of the tools that is very popularly used in behavioral analytics for security. UBA utilize a specific sort of security-based analytics that concentrates on the behavior of the system and the individuals utilizing them. Initially, in the area of marketing, UBA enabled organizations to comprehend and foresee buyer purchasing behaviors. UBA can be phenomenally helpful in the security setting as well. There are two primary activities performed by UBA. First, they decide a pattern of ordinary action particular to the business and its clients. Second, UBA tools rapidly anticipate anomalies which differ from the standards those may require more investigation. In short, they forecast irregular behavior, which may cause a problem. The difference between UBA and other security tools is that UBA tools concentrate on clients rather than action or alerts. There are also some factors which enables UBA work more effectively. The factors are as follows:

- Data Source indicates to the kinds of information the device incorporates with, including the supported pattern such as CSV, Excel, etc. and forms of log records such as firewalls,

file system, routers, VPNs, etc. It's important to know if the tool is preconfigured in order to coordinate with other instruments.

- Partnerships gives a amount of the tool’s attachments capacity with existing base.
- Time span and level of computerization of benchmark foundation identifies with whether the tools set up the pattern in a completely computerized and dynamic design or expect the client to change it. Some tools make the decision dependent on only a couple of past data, whereas some report on a longer period. The records which are generated from the long period have a tendency to give more exact foundation results since they can think about regular variations.
- Time to results (TTR) indicates how rapidly after the primary the results start to create significant outcomes. It is very significant to know the definite meaning of results. A good result will convey already obscure bits of knowledge following the underlying design and formation of the foundation.
- Delivery instrument indicates is how the tool is delivered. Suppliers commonly offer a version which is easily adapted by the business. Most of the sellers intend to offer a cloud base form too. One demanding test with cloud items is that UBA tool requires combination with numerous information sources that organizations believe are delicate for the business and this kind of information is usually not put into the cloud. But sooner the UBA will be more advance to resolve it. (Johnson, 2015)

Pros of using UBA security tool. UBA vary from other tools in not simply assembling and connecting warnings from various system occasions but by utilizing a mix of artificial intelligence and analytical methodologies which includes rules-based, design matching methods, and also supervised and unsupervised artificial intelligence. It's important to build up baselines

about how systems and gadgets normally behave, and after that to recognize inconsistencies in their behavior and send warnings to security groups for further examination. The benefits of UBA are more than other tools in case of credential misuse, threat exposure, account control, and IP/information misfortune anticipation. Initially, they distinguish warnings better and identify better warnings than other tools and then they choose what makes a difference, in order to reduce the noise by improving the signals and lastly, they tackle some security issues with less skilled work. (Irwin, 2017).

Cons of using UBA security tool. Despite being a great tool, there are some weaknesses of UBA which are yet to be resolved. UBA tool cannot discover black swan risk as they don't feature past behavior. Black swan risk is non-calculative which is highly unpredictable and of high impact which is not expected. Even though UBA tools are very efficient at recognizing anomalies but with that a lot of unnecessary behavior data also get detected. To examine this unnecessary data which wastes a lot of time of the analysts. It is not possible for all businesses to set up UBA as they don't have data scientists or any other expertise to run UBA tools legitimately. As only system information isn't sufficient to discover threats and different anomalies, businesses require extra data from non-IT departments like employees' personal records. Due to a large amount of technical work, it is not possible for all the businesses to collect all new information and getting it coordinated. (Ferguson, 2012; Ware, 2017)

Impact of Behavioral Analytics on Marketing

Behavioral analytics is a tool used by businesses which concentrate on buyer trends, patterns, and activities etc. Individuals habits to use the internet is very consistent and has a pattern. In order to enhance customer experience and cater products according to customer's

specific preference, organizations are able to customize marketing actions by developing and implementing analytics in customer behavior trends and patterns.

Some of the advantages of implementing behavioral analytics in marketing and its applications are as follows:

- Comprehend Clients: In an online business, if analytic want to segment clients based on the kinds of reviews the clients want to see. Behavioral analytics can be useful to obtain insights like customers who shop only on sale, customers who buy gifts online, customers who make purchases from the apps etc. Behavioral analytics let the analytic track all information in one place, which enables them to have excess to the past data which was not available before. For instance, by consolidating information from the promotional ad, offline information, and item usage information, it can be comprehended that the genuine effect of each marketing activity, unlike the traditional methods.
- Division of Clients Based on Significant Data: As traditional analytics was based on demographics like age, gender, and location but not behavior. Whereas behavioral analytics is based on behavior which will describe the impact of each promotional activity.
- Reverse Engineer the Goals: Behavioral analytics can be used in the most intense way by the marketers by increasing revenue and figure out the ways to maximize success. Starting with a target and figuring out procedure for accomplishing it is a ground-breaking approach to achieve almost any objective.
- Cohort Analysis: A cohort is a gathering of individuals with alike qualities, for example, individuals who signed up for an online brand's Christmas coupon. Over a period of time,

the cohort summary enables advertisers to record and better comprehend these individuals' behavior.

- Identify the Cancellation Cause: Behavioral analytics not only increase revenue but also help prevent cancellation by predicting the behavior which leads to cancellation. It can likewise help in expanding monetization by distinguishing the individuals that are probably going to do in-app purchase or tap on advertisements and expanding the significance of the offers/promotions.
- Establish a Single Viewpoint for All Your Data: As the data is from various websites and platforms marketers need to spend a lot of time in order to integrate all kinds of data. It not only wastes the marketers time but also prevents to make good strategies as the data is integration is difficult. Behavioral analytics will let the businesses examine the data from a single viewpoint by integrating the data which saves a lot of time for the marketers. (Cooladata, 2017)

Implementation of Behavioral Analytics for Marketing

For successful behavioral analytics, it requires mindful arranging, implementing and outlining the tools. The main portion of the execution procedure spends on arranging so the teams who will be profited will be responsible for choosing and setting up the instrument. The teams need to brace themselves in order to implement behavioral analytics in a successful manner. Firstly, teams need to decide on the target, KPI and metrics. Basically, in order to see if clients are achieving the correct objectives, like driving income for the business, teams must choose the KPIs and measurements that demonstrate advance toward those objectives. For example, a health app could record paid supporters it since it profits through the month to month memberships. Teams should record the measurements from the software enterprise resource

planning (ERP) which could track clients who finish their arrangement since that factor is determined on second-time renewal. Then it is important to characterize client journeys. All client paths through the item that the team tracks, should end in the beneficial result for both the client and the company. For example, in an online business website could record a client from an alluded source to a page visit, choose a product to their shopping basket, and after that checkout, since that path leads to buying. On the other hand, a music application could record clients as they move from its main webpage to playing a tune. Then it can focus on constructing a tracking plan and establish identifiers. Once it is done, it is required to execute analytics and start tracking the events. (Gillespie, 2017)

Case Study: Netflix

To increase their revenue, Netflix is focusing on customer acquisition, customer retention and customer growth. In today's business environment, the client journey is highly complicated as it tends to include a wide range of touchpoints over numerous channels which is over a long period of time. So, the businesses enhance the way to buy through personalization. And also target and secure more clients who replicate the profitable clients.

Netflix is able to measure the usage need of each client needs every month so that it is enough to keep subscribing by leveraging customer behavior data and analytics. Netflix is able to recognize the clients who fall underneath the base usage limit and find the data that can prompt low and investigate over some time. With this knowledge, Netflix needed to find approaches to keep clients engaged. Netflix began activities to enhance their suggested algorithms and find new chances and channels to give customized content proposals based on client behavior. Netflix utilizes client behavior information to make choices on what kind of content and license to produce which additionally makes them avoid churn and also enhance the client experience.

Netflix has successful lessened churn in compare to its competitors. This enables Netflix to spend more on customer acquisition. (Deasi, n.d.)

Limitations of Behavioral Analytics in Marketing

It is vital for advertisers to comprehend that client information isn't all about marketing but with all sorts of different data. The data might be appropriate for a few applications however not useful for every application. As the information of client behavior is from a limited number of clients who have clicked and showed interest in online promotions, it fails to represent the entire client's database. The precision of the client journey is questionable a lot of customers use a lot of different gadgets, so it is difficult to interpret the path. Also, it is very difficult to present the behavior data directly. It can be exhibited by a few techniques these have a tendency to be unlimited to everything except domain specialists. This implies behavior data should be calculated on a daily basis or property basis so that data can be used at large. And due to a lot of security reasons it is not possible to transfer the behavior data across the departments in a business. (Yamaguchi, 2015)

Conclusion

Behavioral analytics has widespread application and achieves good results in areas like security and marketing. By focusing on the behavior pattern of clients, behavioral analytics can predict what is working best for the business. With the enhancement of the information gathering technology of the two-way client seeing information, the technology of transmission has been accomplished with data securing and high storage of such information. Behavioral analytics overcomes one-sidedness of examining data individually, as it analyses continuous information as a whole and from all the areas.

The use of behavioral analytics firstly started in the field of marketing in order to understand the customer buying behavior and forecast the customer journey with the business. There are lot of tools already being implemented and given successful results in the marketing field. Whereas in the field of security, behavioral analytics is still new and undergoing a lot of changes and research. UBA is a new tool in security behavioral analytics, which is developed and widely being used in the field of marketing. As with the developing technology, the kinds of threats are also increasing and becoming more harder to detect so it is vital for behavioral analytics tools to keep upgrading. Businesses that use behavioral analytics to predictive their client journey will have a competitive advantage.

One of the big challenge businesses faces is to recognize the particular issues they are trying to explain with their data. Just analyzing data doesn't have the capacity to provide the desired strategy and solve issues. Distinguishing particular issues allows management to focus on those issues only and aid in decision making. It gives the capacity to design the strategy by giving the significant data which improves the final product.

The technology involved with the implementation of behavioral analytics is very advanced and expensive. Because of this, it is harder for a lot of companies to make the required technological changes and creating jobs for the analysts. Behavioral analytics still need to have simplified tools which are easier to understand and access than what is available today. Behavioral analytics gives an edge to the business in the real world and from internal threats. There are a lot of features of behavioral analytics and it is important to apply them all. So that the maximum number of threats can be found in the area of security in any business and to in order to be able to predict the customer behavior and maximize profits.

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