



Integrating Analytics into the Customer Experience



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THE STRUGGLE FOR RELEVANCE

Internet consumers struggle to find relevance in today's digital world. Constantly bombarded with meaningless content they continue to expand their use of increasingly sophisticated tools to remove irrelevant content such as Popup Blockers (64%), Spam Blockers (58%) and Do Not Call (54%) and are increasingly turning to the new anonymous modes offered by Internet Explore, Firefox Safari and Google Chrome. As the consumers' struggle to find relevance, internet companies struggle to find a connection with the consumer that translates into a meaningful long-term relationship.

The needs of internet consumers and internet companies are unfulfilled by today's existing technologies. Existing web analytics and behavioral tracking technology available to internet companies consist primarily of anonymous data collection techniques that examine the behavior of a machine and not the individual consumer. Furthermore, cookie resets, use of multiple computers and the new anonymous modes recently released in the most popular browsers allow consumers to bypass these technologies and do nothing to incorporate the knowledge gained as a result of the consumers actual transactions into the user experience.

Analytics is an established discipline based in statistics. Everyday we perform a multitude of analytics as we absorb data from our environment, discard useless data and act upon the relevant data. It is a process that is natural and occurs without conscious thought, the question is how to apply this innate ability to massive amounts of data that is stored and organized in our computer systems. Within Customer Intelligence it is often said that "Data is King and Math is Queen". Data offers the detail on individual transactions and math or analytics translates the data into useful actionable knowledge.

THE QUESTION OF WHY

The question is often asked – Why do I need to incorporate analytics into my user experience? You will find the answers in your business objectives. Before embarking on any analytics project it is important to define your Desired Outcomes and Measures of Success. What information will be valuable? What do you need to know? Without this upfront understanding it is unlikely that you will achieve positive results and less likely that the results will align with your business objectives.

The Desired Outcomes that lend themselves to integrating analytics into the customer experience may include:

- Increase the number of repeat visits or purchases.
- Increase the average value of the transaction.
- Increase the number of click-through for owned ads.
- Offer different experiences based on common customer characteristics.
- Increase response to cross channel marketing.
- Increase the viral value of your customers.

AUTHENTICATED VS ANONYMOUS USERS

Online consumer data is divided into two categories, authenticate and anonymous. The difference in an authenticated and an anonymous user is the ability to specifically identify the individual with whom you are interacting. For example, an analytics application that relies on cookies or embedded code to identify visitors does not distinguish between multiple users of the same machine, whereas when a user logs in or authenticates they identify themselves uniquely.

Both types of analytics have their place and your use of the most appropriate analytics depends on what you are trying to accomplish.

- Value of Anonymous Users. The majority of users of your site are anonymous. In the physical world this is most akin to the window shopper. The desired outcome here is most often to get the window shopper to pause long enough to take interest in what is in the window and walk in. Understanding other windows that the user has stopped at and the sites they have entered is a useful analytic because it helps ensure that the window had something appealing to the user that enticed them to take action.
- Value of Authenticated Users – Virtually everyone who transacts on your site authenticates in some way. In some cases the authentication may be as little as a login id or email address or as robust as a complete user profile. The desired outcome for authenticated users is to better understand their consumption behavior and to customize the experience and offers to the individual. This results in an increase in customer satisfaction and increased transactional value or consumption.

The focus of this white paper is Authenticated Users.

UNDERSTAND YOUR DATA

The ability to utilize analytics in the customer experience is rooted in the data that an organization has about its customers. The more specific and relevant data that is captured the more meaningful the analytics.

- What data attributes are available?
 - Mandatory – those that are required for a user to participate in your experience offering.
 - Optional - those that are available to enhance the experience of the user.
 - User – those data attributes that are unique to an individual user and can generally be characterized as identifying (name, email etc.) and demographic (age, gender etc.).
 - Transactional – those data attributes that describe a transaction: Generally there are two types of transactions:
 - Financial Transactions which involve a monetary exchange between the parties.
 - Informational Transactions which involve an exchange of information or data between the parties that does not involve a monetary exchange. Examples

include making a post to a blog, downloading content or extending an offer or invitation.

- How rich is the data?
 - Frequency Counts (Data Density) – the number of occurrences of the mandatory and optional data attributes collected provides insight into the robustness of the data and how useful it will be for an analytics perspective. If there is a low frequency count for a particular data attribute the ability to utilize that attribute in analyzing behavior is greatly limited.
 - Distribution of the Data – while most people understand normal distribution they are also familiar with the 80/20 adage (80% of revenue comes from 20% of my customers). However, understanding the true distribution of the attributes provides great insight into what is actually transpiring with your client base. Are there more males or females? Is there one age group that makes up a disproportionate portion of the population?
- Are there additional critical attributes that are obtainable elsewhere?
 - If you do not capture a robust set of user attributes as part of the registration process it is important to understand that you can infer or purchase many of the attributes not captured.
 - Inference generally takes the form of applying publically available data such as Census data to the user. While this is not an exact characterization of the individual it is useful in providing enhanced understanding at the macro level. For instance, income is rarely available at an individual level but may be inferred based on the income level provided by the Census Bureau.
 - Specific data for an individual such as date of birth, gender, and education can be purchased from third party sources. Though more expensive, this data provides additional insights into the individual.

UNDERSTAND YOUR PRIVACY POLICY

Just because an organization has data does not mean that it can be used. Privacy is increasing in importance as a business consideration especially if an organization's intent is to repurpose or monetize the data it collects about its consumers. Among the key questions to answer are:

- What is your organization's view of privacy?
 - Privacy philosophy starts in the executive suite and flows outward into the organization. When an organization is truly cognizant of consumer privacy it is a key criteria in the business decision process and is a common component of communications (both formal and informal). Are your customers involved in the privacy process?
- How does your privacy policy reflect that view?
 - Privacy policy should reflect the organization's view. It is not a static document written five years ago and posted on your site. It needs periodic review and updating to reflect your organization's current view of consumer privacy.
- Do your CMO and CSO agree on the privacy standards?

- There can be a disconnect between the Chief Marketing Officer and the Chief Security Officer regarding how consumer data can be utilized by the organization. It is best to have this conversation in advance and ensure that all parties are in agreement.
- Do you allow your customers to select their level of privacy?
 - Consumers are becoming increasingly aware of the data collected on them through various media outlets and are becoming more vocal in their demands on how their data is collected and used. Industry standards often provide guidelines with respect to opt-in/opt-out best practices that can be incorporated into your process.
- What is the value exchange for the personal information you collect?
 - Consumers are willing to provide personal information if they perceive that there is a clear value exchange for the information (i.e. receiving a birthday discount). It is important to clearly articulate why the personal data is being requested and what is received in return.
- What is the difference in the Internal and External use of the data?
 - Consumers perceive a difference in their data being used internally vs. externally. Generally they readily accept that data is used internally as it is required to process their order or facilitate their social commerce transaction, and appreciate it if that data is used to enhance their experience with your organization. External use of their data is a touchier subject. While most consumers do not realize how much of their privacy they have given away, they are becoming increasingly aware. Generally consumers are okay with their data being used externally where it is aggregated or where they have given specific permission for its use.
- Do not underestimate the importance of privacy!
 - Privacy is an ever increasing market force today. Consumers are expecting more each day with respect to their privacy. We have seen industries such as credit reporting (FACTA) and healthcare (HIPPA) that now enjoy strict government regulation. Failure to act responsibly with respect to this issue could result in further government intervention.

UNDERSTAND WHAT YOUR DATA IS TELLING YOU

The beginning of an effective customer solution is an in depth analysis of what your data is telling you.

- Start with a data snapshot. A data snapshot is a onetime look at your data across three (3) categories:
 1. customer data
 2. financial transaction data
 3. non-financial data

Ideally you should look at data density, data dispersion and key measurements derived from the data. For the transaction data, select at least two comparative periods to get a quick understanding of trends.

- Identify current Key Performance Indicators (KPI). Your organization's KPI's play a key role in establishing the analytic framework. If established properly the KPI's are those things that

your Senior Management looks at to understand the true health of the business. Movement in KPI's should indicate the way that the business is trending.

- Identify key performance metrics. Not all metrics are appropriate to all organizations. The most important metrics are those that empirically measure the drivers or levers in your business. Often these are not as obvious as they seem or are based upon preconceived beliefs. For example, one may perceive that time-on-site is a key metric for a social commerce organization because it offers the greatest time for impressions. However if a user is not interacting with the site, the impressions are lost; so a more relevant measure (one that correlates to impression response) needs to be discovered. Once understood, the ability to change the drivers enables you to change your business.
- Identify key trends. Once you have identified the key metrics for your business, examine the trends. Are they trending in the desired direction? Is there a distinctive seasonality? How do weekends and holidays affect the trends? Are the effects of promotions or customer communications evident in the trends? Is there something that looks wrong or does not make sense?
- Macro before micro. When examining the trends, go from the big picture to the little picture. This allows you to navigate to the exceptions or trends in that are most meaningful.
- Identify key relationships. Important relationships involve a cause and effect (If/Then). Generally these relationships are between an organization and its customers such as the effect of a discount offer in an email campaign on to promote sales. This is the micro level analysis that must be performed in order to begin integrating analytics into your user experience.

DEFINE REASONABLE OBJECTIVES

Establishing Desired Outcomes and Measures of Success that are achievable is critical. Too often, organizations define overly broad Desired Outcomes (increase sales or decrease customer attrition) without defining what constitutes success. Without specifically defining success up front, it is easy to declare victory while in the jaws of defeat. When defining measures of success, do not forget to include time and return as components of the measurement.

Reasonable objectives are those that can be expected to be achieved given the budget, time period and quality associated with the effort. A low budget, low effort project should not be expected to generate tremendous returns. Likewise a properly funded, high quality project should return superior results. As you begin defining the objectives consider the following:

- Understand how changes in a single KPI affect overall performance. If you are able to affect a single KPI by 5%, what does this do to impact your overall objective?
- Decide which KPI's provide the greatest lift to your business. If you can affect only one KPI which one provides the greatest lift to your objective? It is important to remember that a different KPI may provide a greater lift against a different objective – stay focused on the objective.

DO THE MATH

We have just explored the role of King Data now lets see what Queen Math brings to the party.

Analytics is the art of applying math to data. Fundamentally for the purposes of integrating analytics into your user experience, it is about discovering relationships. Relationships between data attributes are not always obvious and the discovery process is the art. So now that you have an understanding of your data and what your Desired Outcomes are, how do you apply the math?

- Understand what approaches best meet the Desired Outcomes. There are numerous technical approaches and statistical tools available so it is important to focus on those that help you better understand the relationships that move your organization toward its Desired Outcomes. For example, if a Desired Outcome is to offer a customer user-experience based on personas then a cluster methodology is appropriate, whereas if your Desired Outcome is to improve up-sell and cross-sell then a purchase propensity model is a more appropriate choice.
- Try multiple approaches. Most often there are multiple approaches to the problem. Where this is the case, experiment with different techniques and select the one that produces the best results over time. It is also important to periodically revalidate the approach over time as the data changes. You may be receiving more or less data attributes that affect the results or there can be a shift in the data population that affects the analysis.
- Measure the relationships. Within the discipline of statistics there are many measures that assess how close the dependant variable is related to the independent variable (i.e. KS Score and Eigen Values). It is highly unlikely that you will ever find a perfect correlation so it is important to identify those relationships that have the highest correlation.
- Reduce the analytics to something actionable. If the results of the analytics cannot be reduced to something that is simple to understand and implement then it is next to useless. Complexity in the analysis and simplicity in the execution is the only road to success. This is where most organizations fail. They do a very good job in understanding the data and analytics but fail to translate this into a revenue generating / customer service operation.
 - Once completed the analysis should provide a simple if THIS then THAT implementation.
 - The best analytics act as a surrogate for a function that has been traditionally performed in a different way. For instance research indicates that organizations with both a call center and internet presence see a 40% to 60% higher average ticket in sales handled by the call center than in their on-line sales. Most attribute this difference to the ability of the customer service agent's ability to interact with the customer and perform up-sell and cross-sell based upon a brief review of the customer's history. If analytics can act as a surrogate for the customer service agent then the average ticket for on-line orders should increase.
 - One of the best known examples of a surrogate is a credit score. The credit score acts a surrogate for a credit underwriter. In essence, the credit score determines the

approval of an individual's credit application and if approved the interest rate, the credit limit and the amount of deposit required.

TAKE ACTION – DEFINE THE OFFER

How does the offer affect your business goals and the customer's perception of your organization? You now have a simple THIS (a simple easy to understand analytic) but how do you get to the THAT?

- The offer can take various forms. An offer is not always a product suggestion. Too often organizations that only focus on behavioral targeting or site movement miss trigger points. What is it that causes the customer to transact – is it the discount, free shipping or add-on?
- Match the offer to the KPI's that affect your objective. If the offer fails, you move your KPI and then you must question its purpose.
- Make the offer simple and easy to understand. Simplicity sells. The easier the offer is to understand the more likely the customer is going to respond favorably. If they have to think about it, analyze it or read the fine print they are unlikely to respond.
- Have an alternate offer ready. Regardless of how good the analysis, there will not be a 100% acceptance rate – we are after all still human. An alternate offer provides an additional touch point and opportunity to address a customer's desire.

TAKE ACTION – PRESENT THE OFFER

How and when the offer is presented effects results. Within the customer interaction the offer may take the form of a splash page, customer coupon, interactive ad, special promotion code, recommendations or up-sell/cross-sell offers. The offer may appear on multiple pages or a single page; it may be in a banner or driven as a specific part of content. These are decisions best made in conjunction with your experience design team.

Generally you present the offer at key decision points in the customer interaction and position it as a call to action. If you are using a content management system to serve content, the offers are either part of the business rules or integrated through a web services application that calls the content.

MEASURE THE RESULTS

One of the most powerful aspects of integrated analytics is the feedback loop. By capturing the response to the offers it is possible to not only measure ROI (return on investment) but to also include the results of the response analysis in future offers to further improve response rates.

- How are customers responding to the offer? If you are doing bi-variant testing (A – B offers) it is critical that you understand which customer segments are responding to which offer. It is easy to look at gross results and interpret that Offer B is not responsive because its response rate is significantly below Offer A. However, if you look deeper Offer B might be much more responsive for males 26 to 30 with an income of \$30,000 to \$50,000 living in the rural South.

- Determine if you are achieving your Measures of Success. Remember way back when the measures of success were established? Well now is the time to determine if we achieved success or not. As the results come in it is easy to determine if the results equaled or exceeded the plan within the established time frame. Be careful not to be misled to claim an early success or failure as this is a process that must be given a reasonable (not long, but reasonable) time to mature.
- Integrate the response analysis into the analytics process. One of the most powerful elements of this process is incorporating the response data back into the model. This ability to train the model over time increases its predictive results and the return on the investment. While no model will be perfectly accurate (humans do not behave consistently) it is possible to continually improve results through the expansion of the customer base, the use of additional data attributes and incorporation of offer results in the model.

CONCLUSION

The most important question is: Does your organization have the maturity to incorporate analytics into the Customer Experience? In their book [Competing on Analytics](#), Thomas Davenport and Jeanne Harris suggest that only a small percentage of American companies are organizationally and technically positioned to apply analytics for competitive advantage. This does not mean that your organization cannot begin the journey today. This white paper provides a high level road map to guide the process for your organization.

ABOUT VUELOGIC®

VueLogic provides Customer Intelligence and Decision Support solutions to organizations with a web centric customer base, primarily retail, social media and premium on-line content. Unlike traditional web analytics, VueLogic solutions provide deep understanding of authenticated users history and predictive models about value and future behavior. Founded in 2007 VueLogic provides its clients with a comprehensive set of analytic, scoring and data warehousing solutions that assist them in transforming customer data into actionable real time intelligence.

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