Customer Analytics

The Power of Insights in a Modern Data World

slalom

Insights to Action in a Modern Data World

What is Advance Analytics?

Relationships are all around us. Many of them are obvious or intuitive. Many of them are not. Understanding how the change in one thing can tell you about the change in another can offer a tremendous amount of insight in our everyday lives. In fact, we apply these relational inferences to our daily actions routinely when we decide to do one thing vs another based on our historical experiences and the related observed set of outcomes. For instance, business travelers know that it is typically more efficient to carry-on your luggage for a flight than check it ticket counter. Before the observation was made around the speed at which the airlines transfer luggage from airplane to baggage claim carousel, one might think that the hassle and time of taking luggage through the security checkpoint would not offer a significant advantage of experience. However, repeated experiences with similar results, informs the decision to pack efficiently and carry on your luggage.

The example may seem trivial, but in today's world, where data volumes are massive and the trends, patterns, and relationships cannot be easily understood, it is critical to be able to simplify the information to something that is consumable, just like wait times at baggage claim carousels, in order to inform decisions, customer experiences, and organizational processes. Unlocking these relationship to provide insight, can often be the difference in improving, innovating, or keeping pace with the competition. Using advanced analytical approaches as the key to this incredible wealth of organizational insight can create opportunities to increase revenue, lower cost, improve employee and customer satisfaction, and more. The volume of data routinely available to business is exploding. As more sensors and devices become part of the fabric of our products and services, the need to incorporate this and existing data into an analytics framework that drives better and optimized decisions becomes ever more important.

The Opportunity

Engaging customers through a better experience

Businesses have customers. Customers are the central focus of any business that has an interest in existing beyond today. And marketing to those customers to drive better engagement and loyalty is a one of the largest areas of investment that we are seeing in organizational budgets. There are more ways than ever to connect with customers in exciting and meaningful ways. Powerful new analytical capabilities offer the ability to turn volumes of data into smarter business decisions, better customer interactions, and ultimately more sales. Using these techniques are revolutionary for major corporations and their marketing and selling organizations. Companies that leverage these capabilities to unlock their data can open the door to a wide range of holistic customer insights that can help them optimize and manage the customer lifecycle.

Organizations that want to embrace this revolution must first understand the new dynamic of marketing—that customers are individuals and now, more than ever, expect to be treated as such. Companies need to liberate their data and realize how these new insights impact their business model. The possibility of creating relevant, personalized experiences for customers and reaping the long-term benefits of trust, loyalty, and profitability is within reach.

Having a complete view of customer data allows an organization access to such powerful insights such as:

- True share of wallet—how much is a customer is spending on a brand compared with its competitors?
- Likelihood of attrition—how likely is a customer to defect to a competitor and what events trigger that attrition?
- Customer lifecycle—what's the lifecycle of a typical customer from first engagement with a product to brand loyalist? How does this vary for different customers?
- Advanced segmentation and micro-targeting—going beyond "females aged 18– 54," for example, to highly accurate micro-segments based on similar engagement with a brand.
- Personalization—the impression of one-to-one marketing using customer data and sophisticated algorithms to determine personal preferences and usage patterns on a large scale.

With more data comes more responsibility

Corporations have been capturing and storing data about customers and their transactions for years. More recently though, companies are receiving data from multiple channels, such as direct, indirect, and social, and enhancing that data with outside sources to enrich the value of it (e.g Experian, Equifax, and Acxiom) to help complete the overall customer picture. They are connecting data on income levels, education levels, age, and lifestyle data on transactions to create a richer view of customer behavior.

The **Omni-Channel** Customer

However, the key question that organizations must answer is this: How can they make sense of the data deluge in order to deliver value? How then do they extract that value from different and unrelated data across an organization? And lastly, how do you respond to it to these insights in a meaningful way via the right channel?

Liberation of Smarter Data

Many companies have data stored across the organization in outdated or proprietary systems. Typically, this information has been sitting in silos and leveraged only by a single department, if at all, and requires extensive IT support for access. These practices block companies from realizing a holistic customer view and defeat the
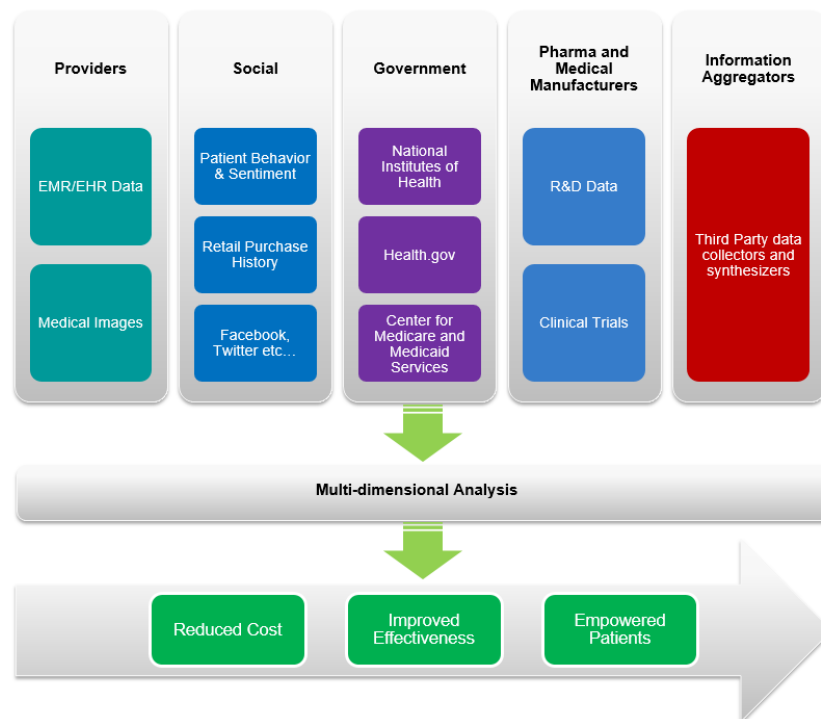
purpose of collecting the data. Today's analytics and smart data solutions can now unshackle data, bringing this information to life for businesses.

While liberating data in an organization is an important step, the problem goes much deeper. Getting the data out of a platform in a form that can be manipulated is solvable, but the real challenge is making data of differing types work together in a meaningful way. It's taking extremely granular data, like click stream data from a website, and marrying it to something broader, such as loyalty or demographic data. This can mean leveraging unstructured data, like social media comments and making it useable in a structured way via text mining for sentiment and trends. Organizations can then combine this information with other data about individuals or customer segments.

A customer's interactions across channels including store, web, mobile, email, and social can then be connected. The power of each additional piece of the customer puzzle allows companies to see the complete path of customer interactions by channel over the long term, and empower deeper understanding of when and why a customer takes certain actions. In today's nomenclature, this is the "Omni-Channel" world we live in.

Companies using new analytics and smart data capabilities to understand and connect at critical points during the customer journey are building deeper trust and loyalty among their customers. They are creating meaningful, personalized interactions with customers as individuals. These connections lead to successful, long-term, profitable relationships. Preventing churn, identifying cross-sell and up-sell opportunities, and ultimately optimizing the customer experience will further help build lasting relationships with customers. Organizations that are willing to go beyond traditional analytics and reporting solutions to embrace and cultivate these new capabilities are gaining a significant competitive advantage in the marketplace. An example of this is what we are seeing in the Healthcare world. As the shift changes from treating illnesses to preventing illnesses, healthcare organizations are bringing together broader sets of data both internal and external to their organization, and applying analytics to best predict the best course of preventative care a patient should receive.

External and internal data relationships combine to provide enhanced insight to preventative patient care

Analytics in the age of the "internet of everything"

Gartner estimates that 4.9 billion 'things' will be connected to the internet in 2015 and the estimate jumps to nearly 30 billion over the next 5 years. While we have been talking about the growth of data for years, this event will lead to an exponential jump in the data volumes to date. But will it be useful? Will it lead to better customer interactions or improved products and services? That will depend on how well the companies that have access to that data are able to incorporate it into their decision making. Or whether the companies that capture that data will use it to improve their services.
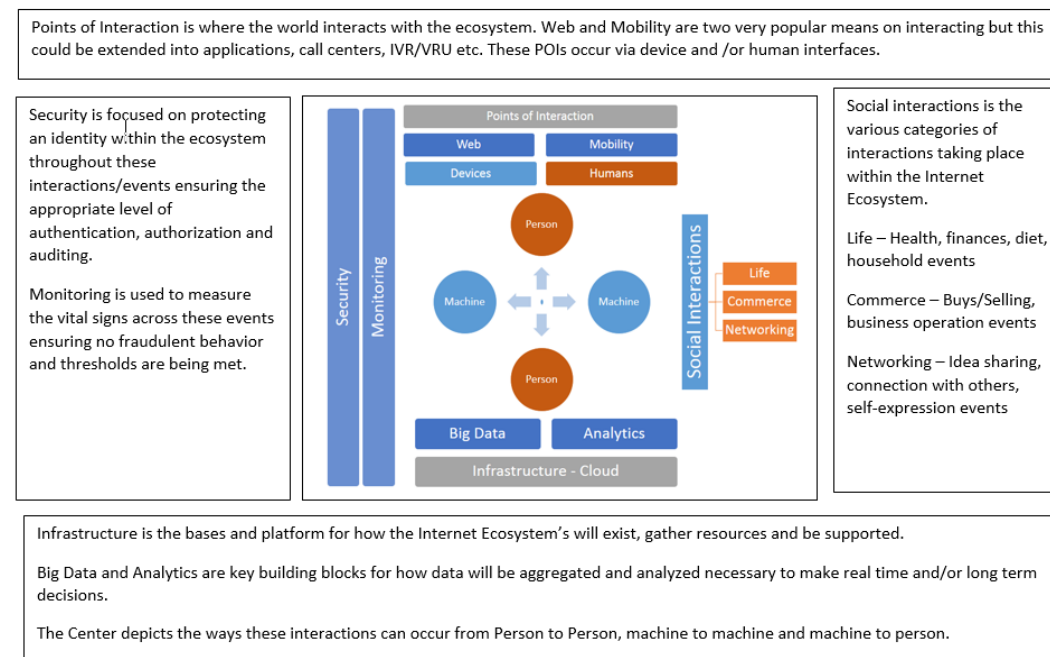
Taking advantage of the potential of internet of things (IoT) means companies must know how to store, access, analyze act on data securely, and most importantly, listen to the feedback from the results. In many instances the architecture is vastly insufficient, the business is not comfortable incorporating the insights into their business models, and the team is lacking the patience and discipline to determine which insight should or should not be acted upon. To do this right means not only having the right technology, team, skill sets, and vision, but also requires a mature and data savvy culture aligning your organization to better answer the question 'If your "things" could talk, what would you want to know?.'

What is the Internet of Things?

IoT is basically the concept of machines (such as devices, sensors, appliances, phones etc.) interacting with each other via the internet as a means of communication. The term that is being used in the industry to refer to such interactions is M2M (Machine to Machine).

For instance, an automobile alerts the driver that another car is approaching while attempting to switch lanes. This could be extended to collecting these events to gain a perspective for an insurance company on the safety rating/insurability of the driver.

Automating the driving experience via M2M

Points of Interaction is where the world interacts with the ecosystem. Web and Mobility are two very popular means on interacting but this could be extended into applications, call centers, IVR/VRU etc. These POIs occur via device and /or human interfaces.

Security is focused on protecting an identity within the ecosystem throughout these interactions/events ensuring the appropriate level of authentication, authorization and auditing.

Monitoring is used to measure the vital signs across these events ensuring no fraudulent behavior and thresholds are being met.

Social interactions is the various categories of interactions taking place within the Internet Ecosystem.

Life – Health, finances, diet, household events

Commerce – Buys/Selling, business operation events

Networking – Idea sharing, connection with others, self-expression events

Infrastructure is the bases and platform for how the Internet Ecosystem's will exist, gather resources and be supported.

Big Data and Analytics are key building blocks for how data will be aggregated and analyzed necessary to make real time and/or long term decisions.

The Center depicts the ways these interactions can occur from Person to Person, machine to machine and machine to person.

Obviously, car companies that can take advantage of these devices can embed advanced services within their cars to provide a more attractive overall customer experience for their customers (or potential customers). These services can enhance the safety and convenience of driving a particular car over another which not only drives customers to want to buy, but also improves satisfaction and loyalty once they do.

Why now and why you?

The scenarios are endless in how companies are leveraging data to revolutionize their products, services, or the customer experiences. The question regarding whether or not an organization should be exploring and building a capability to better glean insight from internal and external data is not IF but WHEN. And the answer is NOW. Now more than ever are the *data*, *technology*, and *skills* accessible to organizations to realize the promise of this area that has been long been eluding them. To realize a strong discipline means to be ready for the future and the future is now.

The Challenge

Doing analytics well means having a culture of data intake, data analysis, insight delivery, decision making, and feedback that is robust and efficient. This typically requires a culture shift among IT, operations, management, and the executive team that can be hard to achieve. Often this leads to insufficiently-supported analytics efforts that are bogged down.

Because it's hard, and not fully supported, many efforts are not adequately resourced. This leads to an incomplete data set, development time frames that are too short, and the wrong questions being answered. The end result can be watered down, and while often interesting, it isn't actionable.

Advanced Analytics hardware and software solutions can cost millions to implement before the consultants or statistically savvy employees are hired. If analytics are not done well it is highly unlikely that this investment can be recouped. There are ways to save substantial costs along the way and Slalom can help you find them.

Advanced analytics is the art and science of uncovering valuable relationships. While it is rare for good analysis to not return invaluable insights, and even rarer to not find a better answer than a gut instinct, it can happen. If the data isn't available or the relationships don't exist, than the effort will not lead to actionable insight. On the other hand, this failure is still valuable because a wide held assumption of the organization has been disproven and can no longer be used to support action.

How can Slalom enable successful Advanced Analytics capability?

In order to do Analytics well for maximum benefit, it takes competency across the spectrum of strategy through technical execution. Slalom's unique approach to *driving value* and *getting things done* while holding course on alignment to business strategy, allows us to fulfill the promise of Analytics to our customers. We partner with our clients to deliver comprehensive solutions by leveraging our capabilities and deeply-skilled practice areas. We establish seamless teams that deliver high quality from a deep business point of view through a technology and analytics solution to deliver value in the following ways:

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Strategy and Operations

- Help identify and rationalize desired outcomes and find ways to leverage IoT as a foundation.
- Use journey mapping to bridge the operational world with technology. Mapping to capabilities, embracing innovation concepts, and framework thinking.
- Identify new KPIs enabled by IoT.

Information Management and Analytics

- Structuring and making sense of data through BI capabilities, project knowledge, and high end analytics
- Crafting solutions with high data security and protection of customer data.
- Leveraging Modern data Architecture to create big data solutions

Products and Innovation

- Evolve the user experience on existing devices on the web and mobile
- Better engage customers with new streams and aggregations of data coming from IoT.
- Incorporating data of the physical world, new kinds of devices, AI enabled interface, and highly personalized content.

Customer Engagement

- Know and better understand the nuances of your customers
- Develop way in which to best interact with them across your different channels
- Apply world class best practices to market the right product and services to them
- Build loyalty programs to retain customers long-term

Technology Enablement

- Structure an IoT reference architecture that makes sense based on desired business outcomes.
- Develop new-age, lightweight killer apps- (embedded devices, cloud), with features focused on capabilities, driven by meta data and events processing, and leveraging open platforms
- Better understand emerging standards
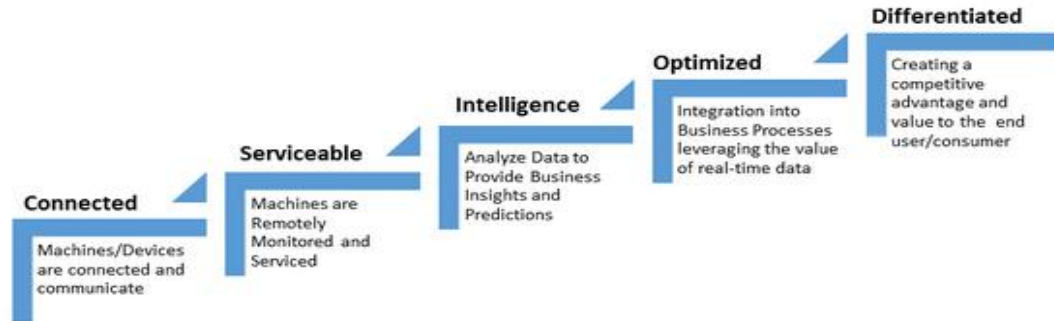
Organizational Effectiveness

- Assessing and improving cultural maturity regarding the use of data and analytics.
- Ensuring enterprise acceptance of the IoT opportunity through change management and training.

Proven approaches

Slalom has a unique blend of disciplines and balanced scale to help you along the journey to creating a competitive advantage using the Internet of Things. The IoT Maturity Model below details each stage along that journey.

IoT Maturity Model

From our conversations with clients, most of them are currently in the first two stages. We are helping oil companies makes sense of billions of rows of data per day, and cable companies predict equipment outages. We are creating personalized web experiences based on real time clickstream data merged with thousands of unique customer attributes. Most of our clients are just beginning to build out the physical and talent infrastructure to gather, store, and protect all this data, as well as to analyze and understand the data are beginning.

To create a competitive advantage, devices must be standardized so they can talk to each other. The right teams with the right talent must be in place to take advantage of this deluge of data. The culture in the business, IT, and the C-Suite must be one of robust data-savviness. And finally, the data must be secure or the pipeline from the consumer will be closed.

The model walks through how organizations can benchmark where they currently stand across their products and services, and think through a roadmap on how to continue to grow and mature. It starts with connecting a client's devices, machines, and "things" in a way that allows them to communicate. Next, these machines will become capable of being serviced via these connections. As machines are serviceable one can now move into the space of analyzing the data to provide business insights and predictions. These data streams can be leveraged to optimize existing business processes and provide a foundation for new use cases. Finally organizations can be in the position to differentiate products and services providing a competitive advantage and new business models.

Client successes

Slalom has a number of successes in the Advanced Analytics space delivering solutions for our clients using IoT data and advanced modeling techniques to help drive our customer's differentiated products and services.

Here are just two scenarios to highlight:

Setting

A Fortune 500 company uses smart meter data to reduce energy demand.

Outcome

Created a prediction model that used smart meter data merged with weather, HR, and operational data to understand peak load periods that drove energy cost. They were able to use the algorithm to shift non-critical resources to non-peak demand period and overall lower costs for the organization and pass on these savings to their customers.

Setting

A winery provides a more informative and enjoyable wine tasting experience.

Outcome

Created an end to end solution with phone app and iBeacons that provides information about the winery and a map including spots for best pictures. The app can easily be updated at any time with new information about wine and the winery at any time. The platform can also be extended to scenarios that improve growing practices as well as customers overall experience.

Agile delivery

Companies have to change the way they approach the process by which we develop our BI tools and analytics solutions. Most data projects today are designed and driven by a centralized function and created using a waterfall methodology that often takes months to go from concept to delivery with relatively little stakeholder engagement. By the time a solution is deployed, the needs have changed or users have cobbled together a partial answer on their own and moved forward. Analytics solutions typically follow the CRISP-DM or SEMMA methodology over an extended time period. Often the end result is not fully understood by the stakeholders and requires lots of iteration before it can be useful.

To truly embrace and take advantage of these new analytics capabilities, a cultural shift often needs to occur within an organization. User experience and agile development can enable this shift. This faster, more people-focused methodology is broken down into four distinct, customizable phases:

Discovery—interview stakeholders, create user requirements, start accessing data, get user requirements, and determine potential questions and how the data will be used. For advanced analytics, ensure that the questions we are answering are of the highest value. Will knowing this change an action that will lead to a better result? If not, why are we trying to answer it?

Design/Variable Discovery—this entails working side by side with users to create storyboards and visualizations to show data in the most effective way. For advanced analytics, we use cause and effect diagraming and then focus on pulling together the most critical variables for each sprint.
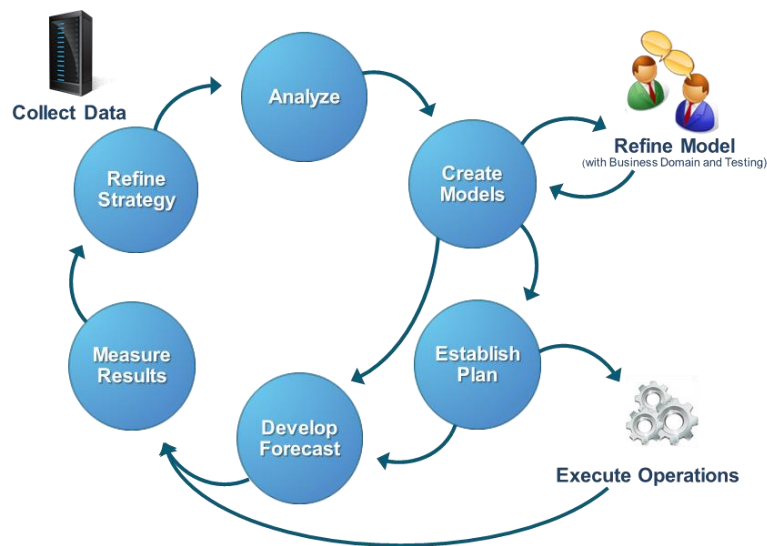
Testing/Model Building—once users are satisfied, the solution is tested by being released to a small group. Adoption and use can be measured, and feedback down to the individual level can be recorded. If the solution is adopted and used successfully by the group, it moves to production. If not, it goes back to the discovery phase to be improved. For advanced analytics, we build the best model we can with the data available for that

sprint. If the results are good enough for deployment we move to production and likewise go back to production if not.

Production—in this final phase, the full solution is built and released, often with some minor tweaks to the testing version.

At Slalom, we have embraced Agile in the BI and Analytics space for years and have proven methodologies for how we apply these techniques to make them work well in this environment.

Slalom Analytics Modeling Methodology and approach illustration

Each one of these phases is measured in days and weeks, not months and years. Often, these projects are done with business stakeholders embedded right into the team, speeding up the process and driving user adoption. Solutions can be expanded or narrowed as needed. Either way, they are adoptable and can be scaled for future uses in different parts of an organization. This ensures that they aren't used during the initial release and then forgotten—especially if they were created to answer a single burning question.

One of the main benefits of using an agile approach for analytics is that you get results and working version very quickly. This allows for honest conversations with leaders about what is realistic and what is needed to improve results. Another advantages Agile has over more traditional approaches is that it embraces changing requirements. Rarely does an end user know exactly what they want up front. Allowing the end user to interact with and critique the end product many times along the process while they are encouraged to make changes results in a superior solution. The end user is involved throughout the process so the results should drive business value. Any analytics work should be judged on what the business learned from exposure to them, what actions they influenced, and what impact they had on improving decisions. In today's analytics landscape, a highly iterative approach with high end-user involvement that embraces changing requirements and prioritizes work based on what delivers the most end user value is one of the best we have found.

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Let's get started

Interested in learning more about how Advanced Analytics and the Internet of Things can help your business? Let's connect.

About the Author

Matthew Lawrence works on Slalom's National Information Management and Analytics practice where he is a principle Data Scientist for the Advanced Analytics capability area. Matthew's background in Marketing Data and Analytics as being a previous small business owner allows him to related to clients' business challenges and apply his experience to help them gain insights and advantages throughout the Customer Experience lifecycle.

To learn more about Advanced Analytics, contact Matthew at **matthewl@slalom.com** or **ima@slalom.com**.