Big data, big opportunity for wireless operators

The exponential growth in mobile device adoption and consumers’ mobile-centric behavior has positioned operators at the epicenter of a new world order. Today, wireless operators have unprecedented access to a wide range of consumer data, providing the opportunity to derive rich insights that form the foundation of engaging digital customer experiences.

As a first step, operators look to assemble robust and predictive customer profiles, which result from data mining and harvesting of insights from vast hoards of data that often are not integrated or easily accessible. In spite of the challenges, differentiation through personalized customer journeys is no longer a nice-to-have. Rather, developing this competency is a business imperative as markets become saturated and new entrants and entrenched incumbents compete to claim new customers and defectors.

Monetize insights gained from big data

Never before have companies had access to more data than they do today. However, leveraging that data to better understand customers and drive business growth is an ongoing challenge.

The volume of big data is staggering. It is sourced from transactions across multiple channels, tracking customer behavior on numerous global web properties, and from third-party providers. Winners will be those who are able to transform petabytes of data into actionable intelligence. Big data is particularly critical for operators due to intense competition and the need to optimize customer experiences to gain loyalty and market share.

Data and its use in the telecommunications market has evolved over time. At first, wireline businesses gathered information about customers, but data was limited and controlled by operators. Wireless services expanded the footprint of knowledge as customers’ mobile activities added new ways of understanding customer preferences.

However, just as wireline businesses did, operators had exclusive access to their own proprietary data. Smartphones and their corresponding app ecosystems and services created new, richer data, bringing the promise of an expanded understanding of customers and prospects. Additional sources of data (and complexity) stem from the addition of services such as TV, broadband, and other services traditionally offered by media organizations.
Although smartphones have created an influx of data, operators continue to struggle to harness it to produce actionable insights. The vast amount of proprietary data related to customers—devices, applications used, usage behaviors (voice, SMS, data usage patterns, location, video consumption, and customer support history)—remains untapped.

For operators, harnessing this data is paramount. The good news is there are ways to start making the most of rich data sources that are not exceptionally difficult or time-intensive. A few first steps can get operators on track to turn big data into manageable data that matters, and actionable intelligence.

First, start by collecting and using internal or first-party data to develop customer segments and profiles. Remember that not all data are created equal. Unleashing the power of the right data not only helps achieve current business objectives, but also can identify new sources of future growth.

A key next step is the identification of predictive data. This requires becoming adept at monitoring ever-shifting customer behaviors in order to develop more meaningful customer segmentation and profiling. Strength in identifying predictive data can lead to substantive differentiation from competitors.

Source and assemble data

Although the returns from big data can be tremendous, the challenges can become overwhelming. The key is to start small and build from there. The first step in attaining improved customer insights and concomitant growth and market share is to take a data inventory. Operators need to gather and analyze their data to determine what is available, and define what complementary data assets are needed to inform meaningful segmentation schemas.

The data footprint on which to ground segmentation and profiling includes several layers:

- **First-party (proprietary) data**: Operators have this at their disposal as a result of interactions with known customers and prospects.

- **Second-party data**: Typically, this information is captured by partners in the operator ecosystem, such as point-of-sale (POS) channel partners or device manufacturers.

- **Third-party data**: This data is derived from marketplace players that sell data about consumer types or behaviors. These data sources can be extensive and contribute substantially to the big data challenge and opportunity.

Operators’ primary or first-party data generally includes customer transactional and behavioral information captured via POS, e-commerce, and call center operations. In addition, operators have usage data across multiple operating systems and device types, applications, location of use, time of day, and frequency of use.

As a first order of business, sourcing and integrating data can be challenging. Different organizational data owners, different data structures, frequency of data capture and file updates, and varying business needs related to the data are among the operational challenges operators and other companies often tackle to establish a solid baseline view of known customers.

An important tool in facilitating effective internal customer data discussions is development of a well-defined customer data model. The building blocks often include a host of data elements. A baseline includes five categories: environmental, online behavior, offline, temporal, and referrer variables.

Integrating and aligning these sources yields far richer information about consumers, yet the process requires a comprehensive approach given the size, complexity, and variety of sources. Although there is no definitive or prescriptive approach to developing robust profiles that lead to effective segmentation, there are successes and guidance that can inform operators’ initial selection of attributes and segmentation methods. It is often useful to conduct a simple exercise: ask what question is the quintessential one to answer, and then decide what data is needed to answer that question.
Basic Profile

Segmentation—make the best use of first-party data

Let’s start by examining segmentation approaches based on operator first-party data. McKinsey & Company performed an analysis of Western Europe mobile consumers that examined a subset of the aforementioned building blocks: voice and data usage and spending patterns. This formed the basis of richer segmentation beyond age or income-anchored analyses—both common initial starting points. This segmentation based on readily available primary data yielded subtle, yet critical, insights. McKinsey broke the customers into named groups such as the “Traditionalists” or “Practicals,” based on various characteristics of each group.

Although certain groups might have been dominant in size or percent of total, data usage and hence, value to the operator, did not align directly along these lines. For example, one group, the “Omnivores” was the smallest group of mobile and smartphone users but utilized 80% of data services. McKinsey noted, “…operators that fail to adopt a sufficiently granular segmentation driven by data usage will not have optimally priced offerings.”

Representative components of more desirable segmentation elements include:

**Usage**
- Total minutes voice
- Minutes divided into time clusters
- Data consumed
- Applications, types, usage (frequency, recency, location)

**Transaction**
- Sales by channel
- Subscriptions
- Plan type

**Touches and Feedback**
- Marketing campaigns > responses, opt-in or opt-out
- Surveys > satisfaction
- Interactions > call center

The next step is to enrich known-customer information with third-party data to provide additional demographic, techno-graphic, and life-event triggers that expand the understanding of customers beyond proprietary data sets. Adding these complementary data can also aid in the identification and use of predictive variables that shape more effective customer engagement and better results against stated business objectives.

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1 McKinsey: Smart Segmentation, July 2013.
Enrich customer profiles and enhance segmentation

The exercise of constructing robust customer profiles using an amalgamation of first-, second-, and third-party data creates a foundation upon which to build further insights. The key question is: which data provide the most value toward achieving robust profiles and predictive segmentation? For operators, primary data sets that include data consumption, voice usage, device type and OS, use of entertainment services, and application types form the standard backdrop for basic segmentation schemas. This exercise can reveal discrete opportunities that operators can pursue for each segment or cluster.

To understand what additional attributes should be considered for inclusion, it is instructive to examine consumers' selection criteria and drivers of purchase-making decisions when choosing a mobile carrier. While plan type and coverage are key factors in the decision process, so too are the device manufacturer, device features, and OS. Significant correlations exist between demographic traits and device characteristics. These preferences can be leveraged to develop initial audience segmentation and targeting approaches.

Operators are fusing traits into the profiles of known populations, and then developing propensity models that provide additional strength to standard first-party segmentation schemas. The desire to capitalize on correlations among demographics, technological propensity (techno-graphics), and device details has lead operators to include additional device-specific data in basic customer profiles. Features that are highlighted within marketing messages can also accompany device information, such as ease of use, longer battery life, and so on.

Predictive Variables

• Sales by channel
• Subscriptions
• Plan type
• Device manufacturer
• OS, including version details
• Features, as described in marketing messages

Knowing and engaging current customers well are fundamental to growing business. To accomplish this, operators can mine the information about existing customers to create look-alike models, such as next product to buy (NPTB), which can help identify prospects or segment candidates in support of acquisition objectives.

Take action: audience targeting, personalization, and optimization

When expanding their segmentation and modeling capabilities by leveraging predictive attributes or variables, how do companies then act on this information in a manner that leads to differentiated results? Companies are harnessing insights in several ways.

First, they are utilizing data about their known customers to engage them more effectively both in company channels and on select third-party digital properties. To accomplish this, operators purchase third-party data—typically cookies or similar data that alert operators when prospects matching characteristics of existing customers visit online properties. Operators then deliver content tailored to these prospects in an effort to solicit desired responses. In addition to look-alike models, companies also perform whitespace analyses to identify additional growth opportunities.

Second, they leverage the knowledge about known customers to target prospects that share similar characteristics or behaviors. With the delivery of more personalized messages and content across various audience segments, operators can then evaluate the levels of responsiveness and associated behavior exhibited by known customers and prospects. The post-mortem analysis can inform refinements in the modeling approach and data sets employed. This testing and evaluation of results will drive further improvements in engagement and tune further the granularity of outreach.

In addition, refinements to models can lead to the identification of new, attractive sub-segments and plans to engage those new targets. With advances in customer data collection and management, along with real-time access to customer profiles and behavioral data, operators are moving customer analysis from the background to the foreground of operations. On-the-fly adjustments to experiences or messaging are entering the mainstream and further raising the expectations of recipient audiences.
These efforts that involve the use of predictive data, robust persona profiling, and subsequent optimization through methodical testing and learning are table stakes—mandatory business capabilities. The market continues to demand more personalized and customized experiences due to the growth in mobile offerings and wealth of associated customer data.

Adding to the opportunity, many companies are seeing the arrival of younger customers whose expanding disposable incomes are accompanied by heightened expectations and demands around meaningful engagement. These customers have grown up in the digital and mobile world and have different digital outlooks and behaviors.

Within this market, the power of predictive analytics cannot be overstated. Earlier identification of desirable segments or clusters within this part of the population curve will position progressive companies to target, win over, and retain customers whose attributes mark them as the desirable segments of the future. These efforts require proactive planning and efficient decision making in order to cherry pick desirable prospects early. Doing so ahead of the competition enables a company to establish stronger, differentiated positioning and gain greater control over future revenue growth.

**Technology platforms and Adobe offerings**

Marketing budgets showed a slight decrease from 2012 to 2013 and investments in marketing continue to lag behind overall revenue growth. Marketing budget ratios (the percentage of overall marketing spend when compared to company revenues) in the technology sector remain flat at 1.5%, yet there is continued shift of those dollars toward digital. In 2013, companies reported spending 35% of their total marketing budgets on digital marketing. These investment trends, coupled with increased scrutiny on ROI, signal that marketing organizations are under intense pressure to become efficient and effective at delivering measurable results. Marketing organizations are finding success through data-driven-algorithmic marketing tactics that enable capabilities such as near-real time delivery of personalized messages and experiences online. Companies are investing in solutions that allow data analysis, modeling and visualization, audience targeting, and site optimization through iterative testing. Solutions within Adobe Marketing Cloud frequently form the foundation of marketing infrastructures found in leading marketing organizations.

Verizon Wireless uses Adobe Target, a solution within Adobe Marketing Cloud, to optimize customer experiences with targeted messaging. In one test, the company used three different home pages—one for prospects, another for customers who had logged on within 30 days, and one for customers currently logged on. Through the investigation of customer behavioral data, Verizon Wireless developed predictive models representing product affinities which were presented to each of the three segments.

The company also altered visitor navigation, product selection, and so on, based on consumer behaviors, and then tested and tuned the results. In this way, the Verizon Wireless marketing team could gauge which website designs resulted in the greatest contribution to sales. As a result of predictive modeling, segmented testing of website redesigns, Verizon Wireless achieved a 33% increase in sales.

**Summary**

In our increasingly digital-centric world, organizations that harness the power of their data have the opportunity to develop differentiated customer experiences and foresee game-changing opportunities in advance of competitors.

There are no correct or incorrect approaches to developing customer profiles and segments. However, there are practical steps that aid in development of internal capabilities and compelling customer insights:

1. **Ingest:** Include additional data elements from purchase history to inform segmentation schemas such as data usage, plan type, device manufacturer, and OS. Layer in third-party attributes that represent acknowledged correlations related to purchase behaviors such as age, household income, and education.

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2. *IDC CMO Advisory Service’s 2013 Technology Marketing Benchmarks Survey.*
2. **Distill**: Use profiles from known customers to identify segments based on affinities and preferences. Develop models to predict future behaviors that can apply to both known and unknown populations.

3. **Execute**: Use insights to target audiences both on-site and off-site. Test various treatments to improve and refine segmentation. For example, some populations may respond to email and others to promotional banners. These preferences become another set of attributes for inclusion in customer profiles.

**General principles in developing predictive customer profiles and segments**

The identification of predictive variables is vital because it can drive more meaningful engagement and responsiveness from customers in support of business objectives. Predictive analytics also play a role in early detection of emerging market opportunities. As companies develop their capabilities, they can learn to optimize and refine approaches, and, as a result, build better testing and analytics strategies.

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For more information