

## Getting Personal with Big Data

By Jesse Cryderman

Mobile devices have ushered in a new era of personalization by their very nature. Consider how mobile devices are linked to a person, as opposed to a service address. In the many decades that preceded the mobile revolution, communications service providers (CSPs) delivered service to a fixed residential or business address, and numerous users at that address consumed the service. Mobile devices, and specifically smartphones, deliver service directly to an individual, and open the door to a whole world of personalization options.

However, based upon the past service model, data analytics in telecommunications is still catching up to the level of personalization offered by mobile and other service experiences, such as the web. These service experience were effectively personal encounters from their inception. But, data analytics historically measured network performance, video stream quality, and other network-related service issues and in recent years some of this data has been exposed for customer experience management (CEM). Now, however, mobile devices unlock a wealth of unprecedented customer-specific data. This rich data provides a virtual cornucopia of customer information. This data can be correlated with network, device, social, and other data to develop a much clearer and valuable picture of the customer and their experience which can be reflected back to the each end-user through greater personalization strategies.

### Crafting Personalized Experiences

The personalized nature of web experiences has created an expectation in customers for similar experiences from their communications and entertainment (COMET) service providers. While shoppers on Amazon.com are served ads that reflect their individual buying and viewing preferences, many mobile app stores serve ads for apps that are already



installed, and aren't capable of offering personalized suggestions. Netflix offers numerous personalized browsing and recommendation options with its user interface (and even multiple user interfaces), while

cable and telco TV is still using the generic "scrolling grid" to display programming options and are struggling to offer a compelling multiscreen experience. Most online news sites offer deep Facebook integration, while native service-provider news reader apps on most

devices lack this option. In meeting this demand, new innovative offerings have gained millions of subscribers while traditional CSPs have continued to shed them.

A frustrating twist is that despite their relative lack of innovation (when compared to Google, Facebook, Amazon, etc.), no one has access to more subscriber information than CSPs; they are literally sitting on a goldmine. And as a result of CSPs of their inaction, over-the-top (OTT) players are finding ways to take their personalized web experiences to the mobile world. In fact, Google already leverages a mobile analytics platform that pulls data from Android devices, determines location through triangulation, and makes this data available to app developers and ostensibly third-parties. Apple has a similar program in place.

### Personalization Boosts Revenue

An advertisement for CSG and Intec, now CSG International. The text reads: "CSG and Intec are now CSG International." Below the text is a red button that says "LEARN MORE »". The background is a grid of light gray squares.

Not for distribution or reproduction.

Personalization doesn't just boost the customer experience, it has been shown to increase revenue as well. This was a lesson learned in the early days of the World Wide Web. During the first internet boom, advertising was either static, or token dynamic (rotating ads served from a static repository). As the inefficiency of this advertising model became clear, banner ad rates plummeted and the business of advertising on the internet underwent a mandatory reformation. Now, internet advertising is highly personalized, much more effective, and has been effectively monetized. For instance, I am an avid guitar player, and Google knows this. When I use Gmail, I am served ads for guitar repair shops in my neighborhood, which is not only useful and relevant, but it has often resulted in a sale, or at least a click-thru and genuine interest. On the other hand, I have never once been served a relevant ad from my CSP through my mobile phone.

Taking these concepts a step further, personalization strategies have been effectively applied across numerous entertainment and communications service models. Tweaked for personalization, everything from news feeds to music channels and video can create more revenue for CSPs. As you can see in figure one below, data from Digitalsmiths reveals that personalized video-on-demand offerings result in significantly higher revenue (Fig. 1).

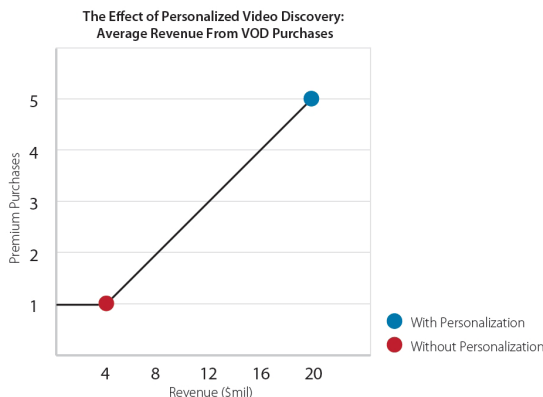
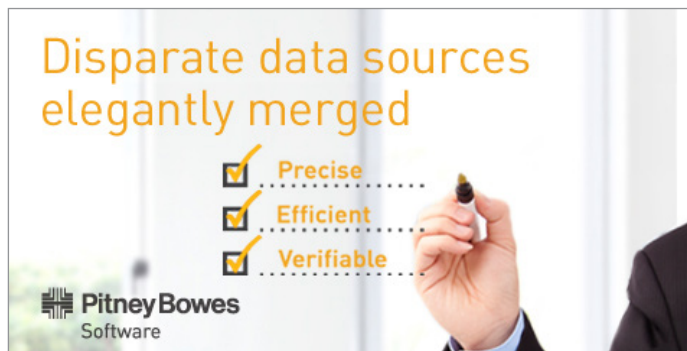


Fig. 1- The Effect of Personalized Video on Revenue  
Source: Digitalsmiths

**Mobile devices are by nature personal, where as traditional cable TV and phone offerings serviced an address.**

### Correlating Subscriber, Device, and Social Data

In order to offer a seamless, connected, personalized experience across multiple devices and platforms, CSPs must correlate and contextualize data from the myriad of sources available, including device, subscriber and social networking data. No one source is superior, but no customer picture is complete without taking everything into account. Integrating social networking data, like Facebook profile information, can immediately make a service more personalized. Likewise, refining the way subscriber and device data is leveraged can provide greater insight into the end-to-end customer experience.

As a CSP, I should be aware of not just my customers' data use, but what they are watching, and if they are viewing it through one of my portals. For instance, if Mike is an AT&T U-Verse customer who watches several Chicago Cubs baseball games per month, I should prioritize Cubs content and marketing to Mike's mobile device. While it's important to understand that data is being consumed from a network perspective, it may be far more valuable to understand how that data is being consumed from a CEM perspective. While much of this information may be unique and sensitive to Mike, communications IT solutions (ComIT) have come a long way in anonymizing this information to protect the identity of the customer, while serving up relevant information to them to enhance their experience.

CSPs who develop app and content aggregation portals can kill two birds with one stone by presenting apps from a variety of sources in a personalized manner (much like Netflix displays movie suggestions based on previous views and user

ratings); while gathering profile data that can be monetized in a variety of methods at the same time.

Coarse (triangulated) and fine (GPS) location data is readily available to CSPs, and although there have been numerous attempts to monetize this data, web offerings are currently much more evolved than most CSP offerings. Further, as CSPs gain a foothold in mobile payment, purchase data can be leveraged. Partnering with services like Groupon, which offers location-based shopping discounts by the hour, could be a first step.

One example of an application of refined subscriber data use could be an automated version of the “call circle” discount option (this was pioneered by Alltel as My Circle, and became Verizon’s Friends and Family plans after Verizon acquired Alltel). Instead of the customer managing the call circle, an intrepid CSP could automate the number selection, based on most frequently called numbers each month. In other words, the CSPs would automatically zero-charge the five most frequently called numbers each month.

Device data can also prove incredibly valuable, not just for advance troubleshooting and customer support, but also personalization and customer insight. Many customer bring devices that aren’t in a CSP’s official product catalog. For example, China Mobile reports 15 million iPhones users on its network, even though it doesn’t officially support the iPhone.

### The Big Data Challenges

The challenge inherent to big data solutions is the defining adjective: big. The larger the customer base and the more information gathered, the more data is created every second. With the rapid addition of new services, devices and new measurement strategies, CSPs are already pushing the boundaries of legacy data collection systems in some cases. Equally challenging, though, is how this data is correlated and contextualized; simply capturing exabytes of subscriber, device, and network data doesn’t magically

Google already collects, leverages, and markets mobile device data from Android devices, including triangulated location data.

deliver insight.

“A large carrier will produce one billion metrics every 15 minutes that need to be analyzed to ensure quality service. But these metrics are often locked into silos and not accessible,” said Jeff Parker, president and co-founder, Monolith Software.

CSPs should actively investigate big data solutions that connect or integrate their multiple silos of information. While this is no easy task, the benefits can be huge. “You’ll hear lots of lip service around personalization, but if you do it right, it’s a major undertaking

that transforms your business,” said Dave Miller of C Spire Wireless. Miller would know; C Spire has a robust, three-tier personalization platform that is resulting in bottom-line improvements and record low churn.

### Solutions

Leveraging partnerships with web-based sources, like Facebook, to create a personalized user tapestry is one effective solution. “More Americans are on Facebook than there aren’t; the future of personalization is much more about mashups and taking external sources augmented with unique information,” D.P. Venkatesh, CEO of mPortal, told Pipeline.

Canadian CSP Telus used mPortal’s AppHouse concept and tweaked it to give its customers a personalized portal to apps and entertainment content. Canada is represented by two languages, French and English. Implementing a personalization strategy based on

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language, device, and zip code significantly increased the number of monetized downloads by Telus customers.

Another option is context-aware analytics, says Duane Edwards, Globys: "Context-aware analytics leverages the vast array of operator subscriber data to predict the relevance to a subscriber of content or offers at a given time or place. When coupled with solutions that can act upon these predictions, context-aware analytics helps deliver a dynamic, relevant and personalized customer experience that traditional solutions, with their static view of subscribers, are unable to provide."

### **Personalization is Critical**

In order to remain relevant in the new digital economy, CSPs need to leverage the wealth of data they have access to in order to craft customized offerings for their customers. Entertainment offerings from CSPs must have personalized content discovery and integrated social components, otherwise they "incorrectly give people the sense that their IP-based service is more valuable," explained Digitalsmiths CEO Ben Weinberger.

**Carrier IQ has developed a data transparency platform that provides consumers with direct insight into their personal mobile experience.**

How long will it take for CSPs to achieve data-driven personalization? Duane Edwards, Globys, says it depends. "Some operators are moving fast enough to be able to deliver on a vision of an improved, contextually-relevant customer experience within the next two years. These operators will see increased customer lifetime value, primarily from better ARPU and better retention. Some will also crack the nut as it relates to monetization of subscriber data for third parties." Regardless of the approach, CSPs must act now to ensure their future and better leverage the goldmine of data they collect every second and are investing heavily in to maintain and manage.