

Communications Review/December 2014

Insights for telecom, cable, satellite, and Internet executives

Mobile data analytics: not just for consumers any more



pwc

Yes, the commercial use of consumer mobile data is advancing, but we believe there's another powerful application of big data for companies to tap into: hiring, engaging, and enabling a highly-skilled, competitive work force.

Mobile data analytics can go a long way in measuring an employee's engagement and in finding ways to improve it.

There's no denying that mobile phones aren't just phones anymore. In a survey conducted by IDC,¹ the respondents indicated that while on their mobiles they spend a mere 16% of their time on phone calls and the other 84% on activities like browsing the web, communicating by email, using social apps, watching videos or TV, gaming, etc. That breakdown of use corresponds to the explosion of mobile data traffic globally in recent years.

Consider this: one exabyte (or one billion gigabytes) of data traffic flowed through the global Internet in 2000. In 2013, mobile networks carried nearly 18 exabytes of traffic, 18 times the size of the entire Internet in 2000. By 2018, mobile data traffic is expected to increase at a compound annual growth rate of 61%, to 190 exabytes.²

As smartphones become increasingly intertwined with our daily lives, it comes as no surprise that an IDC survey claims that 79% of us keep our smartphones within arm's reach for all but two hours of our waking day. In fact, one in four of us will have our phones within reach at all times.³ Whether on a weekend or a weekday, the amount of time away from our phones doesn't change.⁴

Indeed, the use of the smartphone at work is becoming more commonplace and is no longer the exclusive domain of remote or traveling business executives. In a Forrester Research report from Q4 2012, 64% of the respondents indicated that they use their smartphone at their work desk.⁵ And in a study that Forbes Insights

and Google conducted in 2013, more than half of the business executives surveyed indicated they believe that the mobile device will become their primary business platform in three years.⁶

What all this means is that the use of smartphones at work and at play has become indistinguishable: we check work-related emails on our phones during non-working hours. And as much as we may not admit it, we check our personal social networking sites during office hours or browse the Internet on our smartphones periodically throughout the day.

Enterprise mobile insights and the digital avatar

The growing volume of mobile data and the ubiquitous use of mobile phones have been harnessed by marketers to find innovative ways to reach customers. Through targeted mobile advertising, companies are attempting to create interest in their products at the precise moment when consumers would most want them.

Such commercial use of consumer mobile data is advancing. But we believe there's another potentially greater — but still nascent — opportunity for companies to tap into a powerful application of this big data. The opportunity: to hire, engage and develop a highly skilled, competitive workforce.

Already companies are analysing data to help them both target and personalise their marketing and create relevance to mobile consumers. They can study the same data to understand more

profound behaviour, such as mobile-usage patterns common among high-performing employees, what incentives best motivate them, what qualities and skills to look for when hiring, and, perhaps, what triggers certain behaviours.

We've already established that the use of mobile phones has blurred the line between work and play. The mobile phone has become an extension of the user's individuality — representing him or her to the world at large as a 'digital avatar'. An individual user may have more than one persona, depending on the context and situation (such as a work persona versus an at-home persona). The mobile phone is the common thread that ties those personae together. By studying mobile data, companies can find greater insights into how people live, work, and play.

To be clear, we're not referring to 'single-purpose' applications of mobile data to enhance operational efficiency, such as using GPS data from mobile-scanning devices to optimise dispatch and delivery routing in logistics and transportation companies.

What we *are* addressing is the holistic use of mobile phone data by enterprises to gain insights into employee behaviour, and to design strategies that both empower employees and let employees feel more engaged with the organisation. Much like how marketers use mobile data to gain insights into consumers' behaviour and design advertising campaigns to target their customers better, enterprises can use the same mobile data to improve human capital.

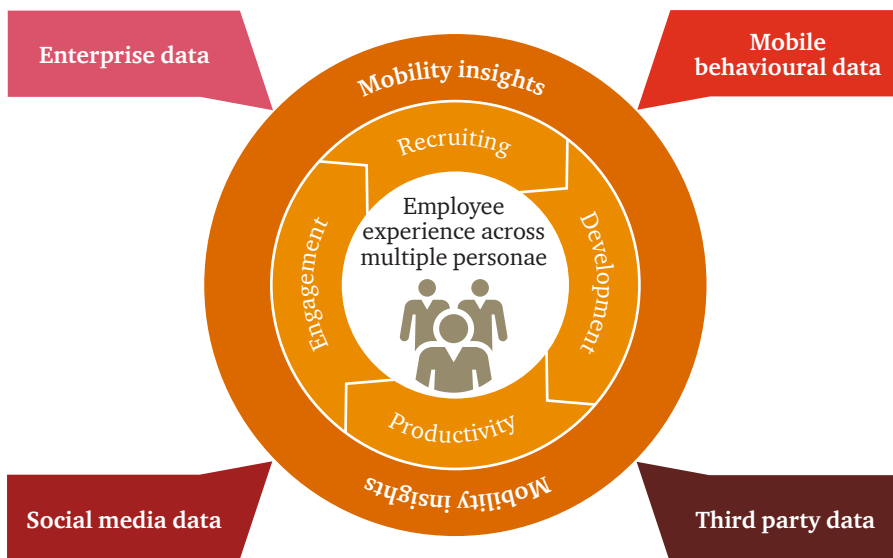
In today's hypercompetitive war for talent, where 70% of US business leaders are concerned about the availability of critical skills,⁷ retaining employees is a top priority. It's critical to build a connected experience for employees that inspires them to feel committed to the company's business performance over the long term.⁸ We believe that the innovative use of employees' mobile data, coupled with sophisticated data analytics using data from other enterprise systems, can help foster the degree of employee engagement a company hopes to achieve. (See sidebar, *New insights into solving human capital challenges*.)

New insights into solving human capital challenges

Many of today's challenges in managing human capital can be addressed by applying mobile data analytics innovatively. Here are a few examples:

Challenge	Data analytics application
Hiring decisions based purely on subjective judgment, intuition, and an at-the-moment connection with interviewees may lead to a potential cultural mismatch between employer and employee.	Sophisticated analysis of top performers shows common characteristics, traits, and practices managers should look for in potential employees.
Employees are assigned job responsibilities based on experience and job title, without considering their individual career aspirations.	Employees' 'digital avatar' reveals that their aspirations and personal experience could prove to be valuable assets in another, previously unconsidered, role.
Employees receive one-size-fits-all approach to benefits, rewards, and recognition, which can alienate employees not motivated by such incentives.	Targeted benefits - travel rewards, child care, flexible schedules — are offered based on employees' unique needs as revealed by their mobile phone usage behaviour.
Employees receive limited feedback in real time on how they perform the job.	Employees who opt to participate in mobile behavioural analytics programme can get in-the-moment feedback of their job performance and can compare performance metrics against their peers in real time.
Having limited ability to predict or anticipate employee churn challenges companies in implementing measures to retain employees.	Mobile behaviour reveals employees who have one foot out the door and provides insight about why they might be ready to leave, how to get them to stay, and whether doing so is worth it.
Applicability and usage of enterprise-specific applications is unknown (typically measured by the number of downloads).	Employees' use of applications reveals when some enterprise apps are being used effectively and that other off-the-shelf apps have unexpected importance within the enterprise — providing an opportunity to share that knowledge with other employees.

Figure 1: The enterprise mobility framework can enhance the employee experience



Enterprise mobile insights: a practical framework

We've developed a framework to extend the notion of the digital avatar to the workplace, where it becomes an employee's representation to the employer, other employees, customers, partners, suppliers, and the enterprise at large (see Figure 1). At the heart of our framework is enhancing the employees' experience — from providing them with the right tools to do their work, to designing programmes to make them feel more engaged and empowered.

Employees' interactions with their mobile devices generate mobile behavioural data, which, when coupled with other data sources, provide valuable insights about the employee as a unique individual. The company can then apply those insights to one or more stages of our employee life cycle: recruiting, development, productivity, and engagement.

Recruiting

Insights from mobile usage patterns can help identify desirable qualities for a particular role based on the

mobile behaviour of existing top performers in a similar role. Knowing more qualities to look for in a candidate can help in identifying the one who will best fit a role.

Consider this scenario: During recruitment season all the top tech firms are circling the best universities, searching for the top talent. But one company has discovered through data analytics that its top-performing employees are using a new social app to discuss the latest in technology. The company uses the app to tell its story, get feedback from recent grads, and spark interest among new potential hires.

Instead of using generic market research that attempts to define what recent college graduates want from an employer, companies will have targeted research at their fingertips. So, by using data analytics to study their top-performing employees, managers can discover not only who might be attracted to their company, but also how to attract them.

Companies have the opportunity to expand their recruiting philosophies and channels by identifying where

mobile users with like-minded personae congregate. For instance, using mobile analytics, companies can identify where current top employees spend their time — such as professional or technical blogs — and can use those sites to identify potential candidates.

By analysing their top performers' mobile use, companies can identify desirable characteristics for a specific role. What apps do they use? When do they use them? How do they use their mobile device to prepare for important meetings? Do they have common behaviours outside work or in establishing a work/life balance? For example, by studying mobile usage patterns, a consulting firm learns one of the common characteristics of a strong contributor to be that before she engages with a client she reads that client's pertinent press releases. The company can use this insight during the interview process to identify candidates who approach their client engagements with similar preparedness and personalisation.

Development

Insights from mobile data can reveal opportunities for an employee to improve his or her performance. They also can be used to personalise the training method and delivery medium to make the training the most effective.

Here's a scenario: Based on mobile usage patterns, a company finds that some of its employees like to stream videos on their phones, others use their mobile devices to read, and still others use their devices frequently to purchase tickets to live events. The company uses the data on the three segments of employees to improve its training programme. Employees who use their mobile devices for videos are given the video-based webex training, those who read a lot are given written material, and the fans of live events are invited to participate in classroom sessions.

Not everybody learns the same way. Analysing mobile behavioural data has the potential to reveal the most effective training methods for various employees as well as insight on when best to offer that training. For example, an employee about to head out on a sales call likely would appreciate a quick training video on effectively engaging potential clients.

Remember: Smart companies put best practices to good use. Insights from mobile data help make that possible by revealing correlations between year-end performance ratings and mobile usage patterns and tools. Sharing those tools companywide can help turn average performers into high performers. For example, by studying the mobile usage patterns, an employer may find that top performers use specific applications for calculations and research. The employer can then offer training in those tools to the top performers' less-productive peers to raise their work quality.

Productivity

In the area of employee productivity, mobile insights can predict the tasks employees need to perform and can serve up applications or reminders for the employees to complete those tasks. By helping to alleviate the burden of routine and mundane tasks, such insights help employees stay focused on their value-adding, decision-making responsibilities.

Suppose a sales manager books travel for multiple trips in a single week using her mobile phone. She also participates in several conference calls with clients while she's visiting other clients in person. Her company observes this mobile behaviour through data analytics. It offers her a videoconferencing application to help reduce her travel during the week and increase her productivity and satisfaction levels.

In another scenario, a cell site engineer walks multiple sites and takes notes using one application on his mobile device. He then takes photos of the site using a different app. Later, he emails both documents to his PC to package and share with his project manager and the customer. His company observes this behaviour through data analytics and gives him a single application that pre-fills location data, includes input fields for notes, and allows him to take a picture. All the information can then be emailed automatically to the customer or uploaded to an internal IT system to streamline the engineer's process.

We believe that increasing employee productivity is one of the biggest opportunities for mobile data analytics.

Engagement

Finally, analysing mobile data has great potential for engaging employees. Enterprises can motivate their employees, for example, by offering highly personalised corporate benefit programmes. Such personalisation can be achieved in part by gleaning insights from the employees' interaction with their mobile phones.

Not everyone is going to appreciate the same benefits. Mobile data analytics can help reveal what employees could use and when they could use it. It's important for companies to recognise the value of timing because employees don't want to be inundated by offers all the time. But at the right moment, they certainly will appreciate an offer. Let's consider an employee who regularly uses a travel-booking app on her phone for personal travel. She also travels a lot for work. Analysing her mobile data, her company finds these 'road warrior' traits. As a perk, the company begins offering her discounts at restaurants, theatres,

clubs, and other sites when she arrives at a new location that she's surely eager to explore.

If a company's churn rate is high, it could analyse mobile data usage patterns to identify employees who may leave soon and to determine whether to try to retain them. It could also use additional analytics to indicate whether or not employees thought to be close to leaving are appropriately matched to their positions and might be happier in other posts.

Employees, especially millennials, want to feel engaged in and challenged by their jobs. They want to feel like they're part of a team and want to play a role in the larger organisation. Mobile data analytics can go a long way in measuring an employee's engagement and in finding ways to improve it.

A good work environment fosters employees' loyalty. Again, millennials in particular are looking for more than just a great salary and benefits. But what makes a work environment good can be elusive to employers. Analysing employees' mobile avatars can reveal what's important to them.

For instance, a large company that analyses mobile data might find that many of its employees are using fitness and calorie-counting apps. The company already has a well-incentivised wellness programme, but it could take additional steps to enhance the effectiveness of those apps in the workplace. It could send an alert about how many calories one will burn by taking the stairs or walking to a meeting, or it could send nutritional information about food catered in meetings. By promoting such healthy lifestyles among employees through the use of mobile data analytics, companies can, over time, reap the added financial benefit of lowering healthcare costs.

Enterprise mobility analytics is not about monitoring employees' behaviour; it's about empowering employees.

Segmenting the employee base

Being able to create a highly customised, individualised employee experience is the foundation of our enterprise mobile insights framework. Just as we segment consumers to offer them more relevant and targeted advertising, we should apply similar principles in segmenting employees.

Traditional psychographic segmentation divides the market into groups according to consumers' lifestyles and other common characteristics. For example, Nielsen's P\$YCLE framework⁹ segments consumers across their life stages and financial well-being.

Similarly, we can segment a company's employee base across multiple dimensions, such as history of employment with the company, life stage as an employee, or the functional role an employee plays within the company. In each of those dimensions, there may be various factors that will help segment the employee base.

For instance, factors that inform an employee's employment history may include years of service, job title, salary range, year-end ratings, history of promotions, recognition awards, and employee satisfaction history based on employee surveys. How an employee's life stage is categorised might be influenced by a combination of promotion level and career aspirations. Lastly, the functional role an employee plays may influence how he or she interacts with the mobile device, including the websites

visited, apps used, location, time of app usage, etc.

By recognising that employees belong to various behavioural segments, we can begin to design employee programmes that cater specifically to each segment.

Managing employees' concerns about data privacy

While it's clear from the previous examples that employees stand to gain much from data analytics, their first reaction may be concern over their privacy.

In the US, for example, several laws regulate the monitoring of employees, and judges have ruled in employers' favour in several workplace privacy court cases.¹⁰ So employers shouldn't be surprised by a level of mistrust among employees. Employees likely will be concerned about the use of especially sensitive information such as an employee's race, religion, gender, age, disability, sexual orientation, marital status, or any other status protected by law.

Companies must address those concerns from the outset. They should emphasise that the goal of gaining insights about employees from their mobile data is to empower employees. It's to use insights gleaned from an employee's mobile behaviour to design tools, procedures, and programmes to engage employees so they can be more productive and feel better connected to the company they work for. Enterprise mobility analytics isn't about monitoring employees' behaviour — that must be made crystal clear.

Besides pointing out the intrinsic benefits, companies can take other steps to assuage fears:

- Be transparent and communicate. Employers should specify the kinds of data they'll collect and analyse. They should also clarify what types of data will be anonymously analysed at an aggregate level and what data can be traced back to the individual employee. And they should provide regular reminders of this in employee newsletters and other communications.
- Let employees opt to participate in the programme. Employees shouldn't be made to participate, nor should they feel that they're being discriminated against if they opt out.
- Give employees the easy ability to change their minds and opt out of the programme.
- Establish a clear policy, akin to a bring-your-own-device policy, that specifies how data will be collected and analysed, including whether mobile device management software will be installed on an employee's phone or tablet. This gives employees the opportunity to reconsider whether they want to use a work-issued device for personal purposes. Data should be collected and analysed only on the work-issued device.

Moving forward

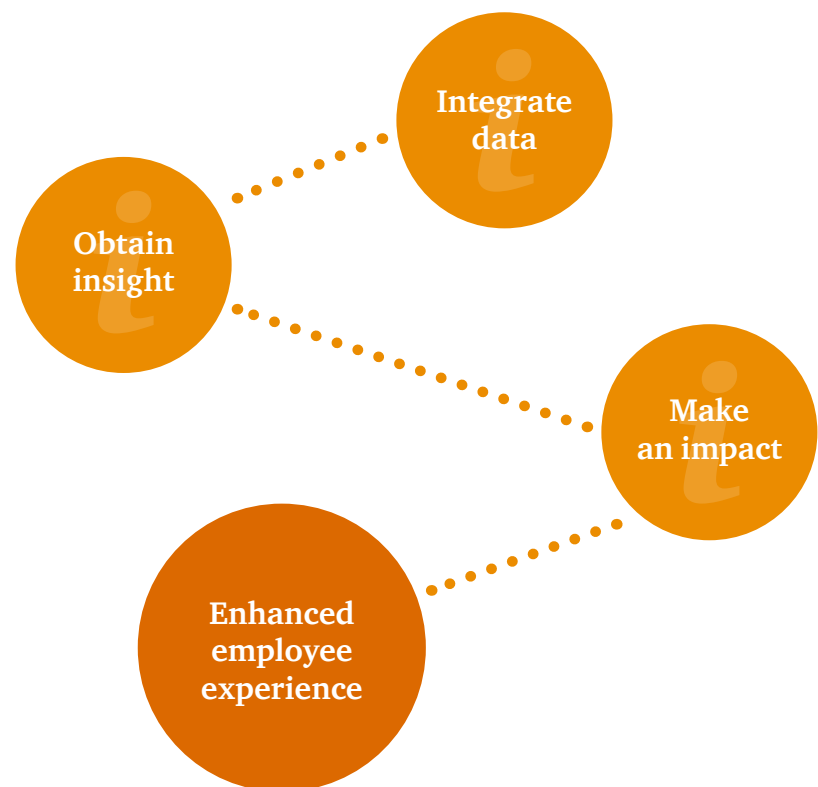
The first step a company can take is to assess its current strategy on human capital looking for an opportunity to incorporate mobility insights to enhance its employees' experience (see Figure 2). If managers recognise the value of improved recruiting, employee development, productivity, and engagement, they should consider implementing a mobility insights platform that accomplishes the following:

- **Integrate data.** Integrate mobile data usage patterns of employees with other enterprise data into a structured architecture that makes it easier to apply data analytics tools and techniques.
- **Obtain insight.** Develop data models and use data analytics tools and techniques to uncover employees' mobile behaviour.
- **Make an impact.** Apply the insights to design highly personalised programmes and campaigns — achieved primarily through the mobile device — to immediately improve the overall experience for employees.

The competition for skilled workers is fierce and companies have to do more than just offer great salaries to compete, especially among the millennial set. Using mobile data analytics can give a company the edge in hiring the best employees, winning their loyalty, and giving them the tools they need to succeed.

The millennial employees will appreciate this as much as their employers will. They want to be a true part of their company's success and, as digital natives, they already know the incredible value of the data produced every day through mobile devices. But is that a view shared across the enterprise today?

Figure 2: Integrate, Insight, Impact



Endnotes

- 1 Always Connected How Smartphones and Social Keep Us Engaged, IDC Research, 2013.
- 2 Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2013–2018, Feb. 5, 2014.
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MW-15-0938 LL