

## Six Mobile Data Challenges

How addressing these challenges will transform your business



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## Introduction

Mobile Data movement is changing the way business is done as we seek to collect more data and analyse it to make better informed commercial decisions. But how exactly do you make smart decisions if the information you receive is not in real-time, not the right content and not available on the device, platform or application you are using? Gartner suggests that “to realize the benefits of the data explosion, enterprises need to be able to move data quickly and efficiently from where it is created to where it will be used.”<sup>1</sup>

Consider a scenario where you need to update your customers on travel delays in real-time to their personal devices. What is the cost and infrastructure required to provide this information to the millions of people travelling daily? Consider another scenario where a financial advisor meets at a client’s office. Whilst back at his office he has his desktop, inside the firewall, with all the information instantly available to provide instant advice. This is not necessarily the case during face-to-face meetings where he is consuming info on his tablet.

The challenge for most businesses is that their legacy infrastructure cannot cope with the speed and efficiency required for data movement on a Big Data scale. Gartner suggests that “large enterprises that fail to make substantial upgrades in their data movement infrastructure during 2013 to 2017 risk the failure of important projects.”<sup>2</sup>

This whitepaper outlines several of the data challenges faced across many industries from telecom companies, retailers, eGamers, broadcasters, financial services firms, social networking companies and travel and transportation organizations. Whilst all very different sectors, the requirements of data in real-time is mission critical within each sector. Highlighted within are steps and solutions to take to improve data movement within your organization to ensure that you are sending and receiving the right data, to the right device in real-time. In addition, you will find a checklist for selecting a highly scalable real-time data solution to help ensure real-time applications have the content required, at the necessary speed, to transform your business.

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**Gartner**

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<sup>1</sup>Gartner, *Use High-Performance Infrastructure to Support Big Data in Motion*, 10 August 2012, W. Roy Schulte, Daniel Sholler.  
<sup>2</sup>Gartner, *Use High-Performance Infrastructure to Support Big Data in Motion*, 10 August 2012, W. Roy Schulte, Daniel Sholler.

## Six Mobile Data Movement Challenges

### 1. Mobile Data Traffic

**Two recent reports from Ericsson and Cisco show that mobile data traffic is only increasing. And whilst that isn't necessarily shocking, the amount at which it is increasing is staggering.**

Figures from an [Ericsson Mobility Report](#)<sup>3</sup> show that mobile data traffic doubled between Q4 2011 and Q4 2012. The report also showed that “40 percent of all mobile phones sold during 2012 were smartphones, compared to around 30 percent for the full year 2011. Only around 15-20 percent of the worldwide installed base of mobile phone subscriptions are on smartphones, which means that there is considerable room for further uptake.” [Cisco Mobile Data Forecast](#)<sup>4</sup> reported that global mobile data traffic grew 70 percent in 2012, the average smartphone usage grew 81 percent in 2012 and that wireless data traffic will continue to grow 66 percent a year for the next five years. It also showed that the global population of people owning a mobile device will grow to almost a billion in five years.

The increase of mobile data traffic only places more stress on the fixed and mobile wireless infrastructure for the service provider and internal network infrastructure for an enterprise supporting multiple devices. This burden will mean the applications users' access from any of their mobile devices (phone, laptop or tablet) will compete for bandwidth and, more critically, the live data that is driving applications and/or services. Competing for bandwidth becomes a significant challenge when time sensitive data needs to be delivered to make intelligent decisions or to reach customers.

Consider a real-world scenario where an advertiser wants to send a 20% discount voucher to customers that are in-store. Waiting for this time-sensitive data to be sent to the back-office, processed and then sent back can mean the difference between retailers having the ability to offer relevant sales discounts to a customer in store or risk the customer finding a deal elsewhere. An example within the enterprise is where a customer swipes a customer loyalty card at the point of sale (PoS) whether on a cash register, laptop or tablet device. Without the real-time data analytics made possible by data moving across the network, the enterprise might not be able to process that the customer is also likely to be out of a cream previously purchased and recommend that item. The opportunity for upsell is lost without this information.

Organizations will therefore need to identify ways to reduce the data sent over the fixed and mobile wireless infrastructure and their internal network infrastructure, while improving the ability to capture and intelligently distribute relevant data in real-time.

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**Ericsson Mobility Report**

<sup>3</sup>Ericsson, *Ericsson Mobility Report*, February 2013,

<http://www.ericsson.com/res/docs/2013/ericsson-mobility-report-february-2013.pdf>

<sup>4</sup>Cisco Visual Networking Index: *Global Mobile Data Traffic Forecast Update, 2012-2017*,

[http://www.cisco.com/en/US/solutions/collateral/ns34/ns525/ns537/ns705/ns827/white\\_paper\\_c11-520862.html](http://www.cisco.com/en/US/solutions/collateral/ns34/ns525/ns537/ns705/ns827/white_paper_c11-520862.html)

## 2. Seconds Matter

**Seconds matter.** Google engineers discovered that if your page takes more than 400 milliseconds — literally the blink of an eye as the New York Times puts it — for your computer to respond to a click on a Web site or a tap on a keyboard, it is too long<sup>2</sup>. And if a site loads too slowly, even by seconds on whatever device the information is requested, customers will go elsewhere. The Google research showed that people will visit a Web site less often if it is slower than a close competitor by more than 250 milliseconds. This will in turn impact customer retention rates.

Now apply this insight to consumer and enterprise applications. Whether as a consumer or employee, we are all impatient. So whether it is a Web page, an app or a platform to access insider information, if data or information is not loaded fast enough on whatever device used to access it, we'll go elsewhere. Consider the following three very different scenarios:



### Critical Data on the Trading Environment

If accurate market data is not sent at speed to wherever a trader is working, on whatever device he or she is using to access it, intelligent decisions cannot be made.



### Consumer Experience

A customer wants to make a purchase on his or her mobile phone, but after tapping complete, the app doesn't load so the customer isn't sure if the item was purchased or not. That customer will be frustrated and potentially lost.

Consumer experience is improved if accurate and real-time data is sent.



### Travel

An airline gate changes and the customer is alerted via a text message. Maybe the flight is cancelled and the airline can see in real-time where the customer is travelling, bump him or her to another flight and send a text that says your flight has been cancelled, but we have already reserved your seat on the next flight.

An extension to this example is providing an airport's ground crew using tablets and smartphones with real-time notifications of delays to aircraft, boarding stairs, luggage conveyors, fuel truck, tugs, etc. so they can adjust as required.

In this 24/7 information driven world, it is going to be businesses that provide instant, and, just as important, relevant content to a customer otherwise sales and up-sell/cross-sell opportunities will be lost.

These situations show how the importance of getting critical data to the customer and the business because seconds matter in delivering quality service. And if you are not providing it, your competitors will.

Speed is a critical factor in these situations. Combine that with intelligently supporting a two-way dialogue between the business and customer and the traditional conversation can change dramatically.

<sup>2</sup>New York Times, *For Impatient Web Users, an Eye Blink Is Just Too Long to Wait*, 2012, [http://www.nytimes.com/2012/03/01/technology/impatient-web-users-flee-slow-loading-sites.html?pagewanted=all&\\_r=0](http://www.nytimes.com/2012/03/01/technology/impatient-web-users-flee-slow-loading-sites.html?pagewanted=all&_r=0)

### 3. Customer Lifestyle

**Our lifestyles have changed. We want to consume information on the closest device available to us – whether it is in a work situation where we access our emails on a tablet, laptop and phone or review documents on a tablet because we do not have access to our desktop.** In a consumer situation, it could be where we compare the cost of a child’s car seat, in-store on our mobile devices or watch a movie on our laptop while checking Facebook on our tablet. Supporting your customer, employee or partner by conveniently delivering the data required to meet their lifestyle or make better business decisions is a differentiator and critical to success.

Essential to supporting our mobile lifestyle is data movement, particularly when and where it is consumed. Having timely, relevant data on any network-connected device is key to making smart decisions.

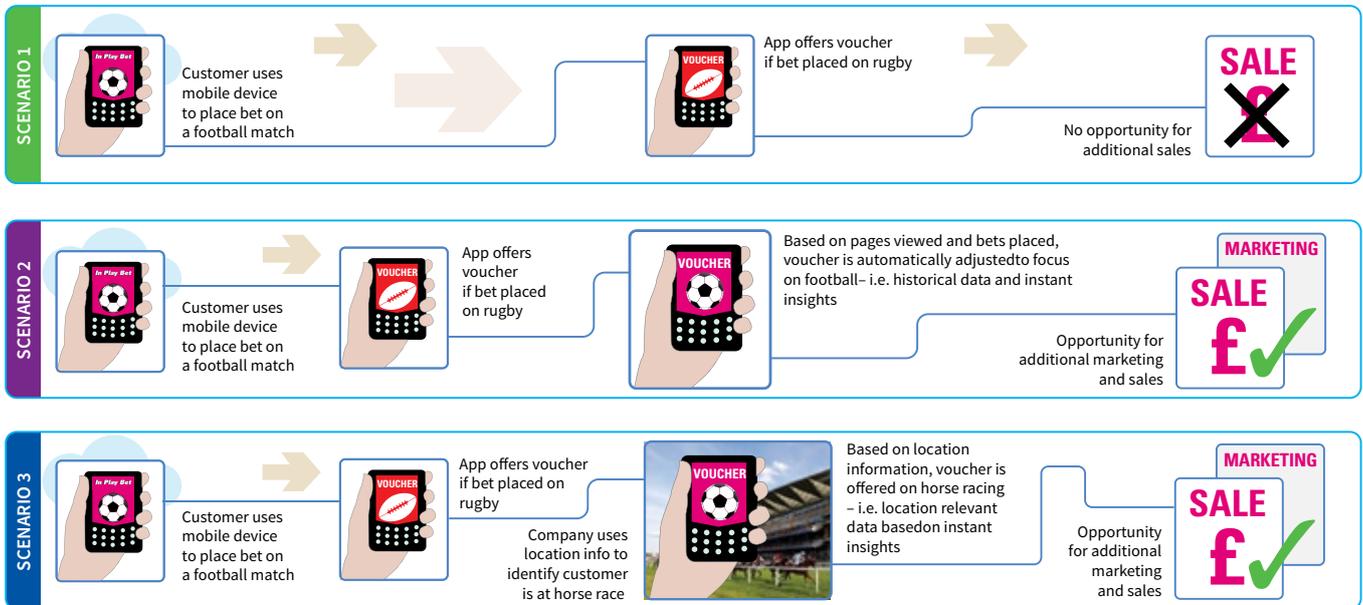
In being able to support this type of lifestyle, businesses will be able to set themselves apart and create new and innovative revenue generating opportunities. Back to the example of travel, if consumers know a train is delayed, they might make a decision to buy dinner before boarding the train. Better yet, the train company could inform the customer of the delay and offer a voucher for 20 percent off at a partner restaurant or supermarket. By supporting our new mobile lifestyle, businesses can make intelligent decisions based on real-time data, but most importantly deliver it to the customer on the device of their choice instantaneously.

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### 4. Big Data

**Big data means many different things. The point is that organizations have vast amounts of data on businesses, consumers and their habits. Here the importance is not necessarily how data is mined, but instead how the combination of historical data and location relevant real-time data can be used in a powerful way.** To illustrate this point, look at a traditional customer relationship management system (CRM). The marketing team will use it to segment audiences – whether a group of males between the ages of 25 and 30 with an interest in luxury cars or women that have purchased a specific gym membership. Marketing can target these groups based on the historical data mine. In both scenarios when real-time, location relevant data is combined with historical data, targeting becomes more intelligent. In the first scenario of men interested in cars, if a car dealership knew that a particular male was within close proximity to the garage, he could be sent a notification that BMW is offering zero percent deposit and low financing. In the latter example, a sports retailer could offer a discounted rate on new running shoes because of the specific length of time a woman has had her gym membership.

Another example is where an eGaming company can access instant insights into what customers are doing on their website at that particular moment in time. Consider the following three scenarios; when intelligence gained through real-time insight is applied, opportunities for marketing and sales arise.



By combining historical data with real-time insights to push messages accordingly, businesses can start interacting with customers and entice reactions.

## 5. Data Connectivity

The world's wireless operators are moving beyond 3G to the Long Term Evolution standard, marketed as 4G LTE. An IEEE Spectrum article points to the benefits that *“LTE networks deliver data download rates about 10 times those of 3G while making more efficient use of the radio spectrum. Basically, 4G LTE can keep up, if just barely, with the soaring data demands of the fast-growing ranks of ever more sophisticated smartphones.”*<sup>6</sup>

The key benefits for these wireless operators are higher speed-data for mobile and tablet devices and an overall increase in mobile application performance, but it comes at a cost. Operators are paying the price to move to 4G and are only able to recover this cost by charging customers more for the service. In reality though, only about 10 per cent of global wireless subscribers will have LTE access by 2015, and many believe that LTE can only barely keep up<sup>7</sup>. In many ways this is like adding another lane on the freeway to find that in a matter of months the traffic continues to back-up.

The answer however is to consider your data distribution strategy as a whole and not just the data connectivity. Organizations must consider how they will reduce the strain on the network by reducing the amount of data sent across it. The solution is linked to the next challenge.

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IEEE Spectrum article

<sup>6</sup>IEEE Spectrum, Fantastic 4G, <http://spectrum.ieee.org/telecom/wireless/fantastic-4g>

<sup>7</sup>IEEE Spectrum, Fantastic 4G, <http://spectrum.ieee.org/telecom/wireless/fantastic-4>

## 6. Needless Data

**Another data challenge is that there is a lot of unnecessary data clogging the networks as it is sent backwards and forwards across the existing infrastructure. To transmit this data comes at a cost as organizations require the servers and networks to support it. The knock on effect can be a delay in transmitting critical data which could result in lost revenue opportunities.**

Here an organization needs to consider intelligent data distribution where only the changes in information are sent and stale data is eliminated thus reducing the strain on the networks, improving speeds all while reducing the infrastructure required to support unnecessary data transmission. There can be huge CAPEX reduction as a result or servers can be used for new products and services.

These six data challenges highlight the immediate need to address intelligent data transmission, in real-time, to any device.

## How to Address the Data Challenges to Transform Your Business

**The way a business transmits data will dramatically define how it succeeds as we transition to our mobile world. The importance of data movement should not be downplayed as it will help to transform the business by delivering market competitiveness.**

In understanding how data movement can transform your business you first need to consider a number of questions. These include:

- What is the mobile business challenge you are trying to solve?
- What are your critical data needs both now and in your future roadmap?
- What data do you own?
- What data do you use?
- How do you need to get this to the end user i.e. support for all devices?

### ***Selecting a Highly Scalable, Real-Time Data Solution Helps***

There are many data movement solutions on the market or perhaps you are considering a home-grown solution. However, the benefits of using a fit-for-purpose solution are vast, including a radical reduction in data communication costs and the hardware required to distribute data. When evaluating your solution of choice, here is a ten point check-list of capabilities to investigate.

1. Is it real-time?
2. Can it support real-time bi-directional conversations?
3. Can it remove redundant information from the two-way data stream?
4. Is it intelligently and dynamically updating data in transit?
5. Can data be delivered to any device regardless of make and model?
6. Does it support intelligent reconnect i.e. if connection is interrupted, can your servers automatically re-instate when you are back in signal?
7. Does the solution allow you to scale to hundreds, thousands or millions of connections?
8. Does the solution allow you to scale quickly i.e. in seconds?
9. Can the solution select the fastest possible protocol to connect to a device to ensure quality of service?
10. Can the solution dramatically lower your data movement costs?

If you answered no to even one of these check boxes, the way you move mobile data could be done better. Having the full-range of capabilities outlined in this whitepaper will help to improve performance, optimize bandwidth, lower the cost to serve the data and ultimately enable the best live customer experience.

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Maximizing your mobile data distribution system for scale, whilst ensuring consistent delivery, guarantees responsiveness, timeliness and relevance by avoiding the distribution of soon-to-be-stale data. This is particularly significant where clients or servers are running near to saturation based on limited available connectivity.



## Diffusion™

The six challenges outlined above, in addition to others, can be easily solved with Push Technology's core platform, Diffusion™. Diffusion™ delivers the right data, to the right device in real-time, intelligently. It offers high performance and connected multi-channel solutions to distribute data without the need for significant changes to existing infrastructures.

Diffusion™ provides a one stop, end-to-end solution for delivering real-time data services to network connected mobile clients. It provides all of the components required to deliver a scalable, high performance solution across a broad range of client technologies. Diffusion™ offers a high throughput, low latency message broker; scalable, cross-platform connection infrastructure and intelligent traffic management and shaping.

Diffusion™ provides significant benefits to customers:

- Stream real-time, dynamic content over the Internet to any device.
- Stream device-to-device over full bi-directional communication infrastructure – enabling a responsive and immersive customer experience.
- Network-driven analytics to provide insight and understanding of real-time data.
- Significantly reduce network and hardware requirements.
- Elastically scale to meet peak demands and market / product complexity.

With Diffusion™, organizations will have a highly scalable, real-time data solution that can intelligently send the right data, to the right device in real-time.

## Conclusion

The six challenges – increased data traffic, need for real-time communication, requirement to support any devices available on the market, ability to analyze historical data against real-time data, data connectivity and needless data – will only increase as the requirements of real-time data becomes even more critical to business success. Businesses, whether telecom companies, retailers, eGamers, broadcasters, financial services firms, social networking companies and travel and transportation organizations need to improve data movement within the organization and to its customers and partners to ensure that only the right data is sent to the right device in real-time. Push Technology's core platform, Diffusion™, offers organizations the solution required to address these challenges and more with a highly scalable, real-time data solution that will help transform your business.

## About Push Technology

We make the Internet work for our mobile-obsessed, everything-connected world. Leading brands like 888 Holdings, DAB Bank, IBM, and William Hill leverage our technology to power applications critical to revenue growth, customer engagement, and business operations. Learn how to deliver apps at scale and speed at [www.pushtechnology.com](http://www.pushtechnology.com)

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