

# FUTURETEXT

## Big Data and Telecoms - Opportunities beyond reducing churn

### Opportunities beyond reducing churn

Big Data is the latest buzzword coming from the ICT industry.

Like others before it (ex - Web 2.0), Big Data will have implications for the Telecoms industry.

In many ways, Telecoms Operators already manage large amounts of Data.

So, on first impressions, they start off on a good footing when it comes to Big Data

However, the term “Big Data” – has a specific meaning

If we consider the [3Vs of Big Data](#) i.e. Volume, Velocity (rate of change) and variety (of datatypes) – then Telco data is large but not ‘Big’. For example, in comparison to web entities like Facebook, Telecoms data is mostly transactional data (CDRs) and does not have video for example.

Definitions aside – the value of data and Big Data lies in it’s utility

At first glance, we may think of the classic applications like ‘reducing churn’.

But Churn reduction has been possible long before Big Data came along.

Applications like Churn reduction look ‘within’ – and provide a comfort factor – a sense of familiarity

But are we making the best of all the opportunities if we stick with the familiar?

In this article, I propose that to make the best of Big Data Opportunities, Operators have to look at datasets that lie outside their enterprise and specifically at analytics and algorithms.

This approach is part of the [course I teach at Oxford University on Big Data and Telecoms and part of my forthcoming research/books](#)

### Why now?

Times are indeed changing .. and there are three reasons why Big Data presents new Opportunities to Operators now:

1) **The regulatory environment is changing** - Mobile Data has always been then hidden asset for Telecoms but they were so far – unable to leverage it – mainly due to regulatory reasons.

That is changing. The Telegraph and Business Insider report that information on 17 million mobile phone users in UK will be sold to corporations wishing to advertise their products and

services on the internet([Mobile giants to profit from data they hold on millions of phone customers](#)).

On the other side of the Atlantic, FierceWireless reports that AT&T is also following suit of other internet giants and may start selling anonymous information about its customers' wireless and Wi-Fi locations, U-verse usage, website browsing, mobile application usage and other information to other businesses. AT&T's plans differ from other companies in that AT&T is the only major carrier in US that has fully integrated extensive wireless and wireline businesses. ([AT&T prepping sale of customers' anonymous location information and Web, app usage data](#))

**2) Availability of Data and secondary use of Data sets** - Many datasets will have secondary uses and will be hence potentially monetizable. For example – an analogy is – Bus routes which could be used to create a system to indicate when the next bus is due (which is a secondary use of the route dataset). With increasing availability of Open Data, secondary uses of Data will proliferate also

**3) Change in customer perception** - There is a change in user perception of data. Firstly, Users are not trusting a single entity. For example – whatsapp is used for chat (and not Skype which came first and had it's own chat system). Similarly, Foursquare is used more than 'Facebook places' which has been retired. Secondly, new data strategies are being tried out such as the [Rubbish bins used to track smartphone users](#) – that would have been unheard of a few years back .. So, customers are sharing more data – they are not trusting a single entity and new business models are being tried out

### **Where is the value?**

The McKinsey report on [Big Data says that Big Data can create value in 5 ways](#)

Big Data can create value in 5 ways:

- by making information transparent and usable at much higher frequency;
- by enabling organizations to collect more accurate and detailed information on everything (from product inventories to sick days etc), thus helping them to boost performance;
- by allowing ever-narrower segmentation of customers and more precisely tailored products or services ;
- by allowing sophisticated analytics to substantially improve decision-making;
- by allowing manufacturers to use data to create innovative after-sales service offerings such as proactive maintenance.

To me, the underlying theme is that - value is not in the data but in the analytics

### **Big Data and Telecoms - the IOT data stream**

Data is commonly available and will continue to be so as customers share data and Open Data principles proliferate. The challenge is to add value to the data and / or gain new insights from existing data streams which will be available to all.

Let's consider the IOT (Internet of Things) Data stream.

Increasingly – Telecoms / Mobile will need to have the ability to handle real time data and many ideas taken from the web will not apply to Telecoms

For example – appstores.

How do IOT appstores differ from conventional appstores?

Conventional appstores add commercial features like packaging, discovery, monetization etc but do not extend to the sense-compute-actuate paradigm.

**“IOT appstores differ from traditional appstores** for two reasons

a) Their reliance on multiple sources of sensor based open data and

b) The need of actuating devices in (almost) real time.

Conventional appstores do not need data from a variety of sources. Nor do they need to immediately actuate.

IOT devices may also send data about themselves periodically, on demand or triggered by an event.

The IOT service would thus need to “sense – compute and actuate” in almost real time.

[Sense Compute Actuate](#) is a well known idea in Digital control systems but not in conventional appstores

In practise, this vision will look like [‘Google now’](#) for Telecoms but with physical data overlaid

In this case, the data will be freely available – but the insights lie in the analytics

### **In conclusion – not plastics but analytics**

In the movie, The Graduate, Dustin Hoffman was told that the future was in ‘Plastics’. That was in the 1970s. The future today may well lie in ‘Analytics’ and not Plastics

In Data Warehousing circles, there is an urban myth of [‘Nappies and Beer’](#) . *The story goes that a large supermarket chain, usually Wal-Mart, did an analysis of customers' buying habits and found a statistically significant correlation between purchases of beer and purchases of nappies (diapers in the US). It was theorized that the reason for this was that fathers were stopping off at Wal-Mart to buy nappies for their babies, and since they could no longer go down to the pub as often, would buy beer as well. As a result of this finding, the supermarket chain is alleged to have the nappies next to the beer, resulting in increased sales of both.*

If we tie these ideas together, then the real value in Big Data analytics for Telecoms lies in finding the ‘Nappies and Beer’ combinations. The Harvard business review says that [the role of the Data scientist will be one of the hottest roles going forward](#).

How will the role of **Data scientist differ for the Telecoms / Mobile ecosystem?**

Big data analytics for Telecoms – will be based on classic Big Data algorithms such as predictive algorithms, machine learning algorithms, algorithms implemented in [Apache Mahout](#) etc but specific considerations for these algorithms will apply based on datasets and Telco domain knowledge. For example - Some of my work is involved in applying the real time [Twitter Storm algorithms](#) to Big Data and IOT

So, I believe that Analytics will be more important than Data itself and will apply to many Data streams (such as IOT) in the Telco context

The challenge is to take advantage of the opportunities and look beyond conventional thinking!

## About

Ajit Jaokar 's work is based on identifying and researching cross-domain technology trends in Telecoms, Mobile and the Internet.

His current research interests include Big Data, Telecoms, Smart Cities, Big Data Analytics and IOT

Ajit conducts a course at [Oxford University on Big Data and Telecoms](#) and also teaches at [City Sciences \(Madrid\)](#) (from Jan 2014) on **Big Data Algorithms for future Cities / Internet of Things**.

In 2009, Ajit was nominated to the World Economic Forum's 'Future of the Internet' council. In 2011, he was nominated to the World Smart Capital program (Amsterdam). Ajit moderates/chairs Oxford University's Next generation mobile applications panel . In 2012, he was nominated to the board of Connected Liverpool – Resilient Liverpool programs – based in the city of Liverpool for their Smart city vision. Ajit has been involved in IOT based roles for the webinos project (EU funded Fp7 project)

His **consulting activities** include working with companies to define value propositions for Big Data. Ajit has worked with a range of commercial and government organizations including in strategic and visionary roles. Since May 2005, he has founded and run the **OpenGardens blog** which is widely respected in the mobile/telecoms industry.

Ajit has spoken at many **conferences** which include MobileWorld Congress (4 times) ,CTIA, CEBIT , Web20 expo ;Java One; European Parliament; Stanford University; MIT Sloan; Fraunhofer FOKUS ; University of St. Gallen (Switzerland). He has been involved in transatlantic technology policy discussions

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