



RTT TECHNOLOGY TOPIC April 2013

Big Data

A recent presentation from [Criteo](#) at a [Digiworld](#) breakfast briefing highlighted the role that decisional and associative maths is playing in realising value from Big Data.

Big Data is the generic description for data that is too large to be analysed in near real time using traditional analysis techniques.

Given that most of the software code uses Bayesian conditional probability theory developed by the Reverend Thomas Bayes in the 18th Century and Boolean logic developed by George Boole in the 19th Century this is perhaps a bit misleading but the point is well made that data on its own is a cost. Data when combined with maths is a profit opportunity.

Criteo are a French company specialising in optimising individually targeted display advertising. The company analyses first party and third party data to deliver optimised banner advertisements.

First party data, data collected from individual browser behaviour captured by cookies, includes things like colour preferences, hobbies, professional interests and other metrics. Third party data includes things like the weather. The two sets of inputs together determine what banner advertisements appear in the browser and how the advertisements are configured, a process that takes a few milliseconds.

The mobile operator would seem to be ideally placed to realise at least some of this value by adding location and positional context but the relative market capitalisation of Google and Vodafone highlights the reality that to date the mobility premium has been marginal and the benefits of that premium have not been captured by mobile operators or their vendor community.

This is despite substantial prior investment.

When Nokia invested \$8.1 billion dollars in [Navteq](#) in 1997, Pekka Kallasvuo, Nokia's president and CEO announced

"Location-based services are one of the cornerstones of Nokia's Internet services strategy"

"By joining forces with NAVTEQ, we will be able to bring context and geographical information to a number of our Internet services with accelerated time to market."

So what went wrong?

From a technical perspective it can clearly be observed that in 1997 market ambition had moved dangerously ahead of technical hardware and software capability.

Neither the phones nor mobile networks were capable of delivering a location and context driven experience which could be made accessible or useful to the user and GPS performance in small form factor devices was not that great either.

This was problematic because the user experience from the fixed internet was undergoing a transformation which was impossible to match in the mobile domain.

The question is has this now changed and are we finally going to witness a mobile internet revolution?

The answer to this is probably yes. The mobile internet experience is now accessible and useful and all

that map stuff is now finally working albeit with one or two hiccups on the way.

It's the five year rule that gets forgotten.

Mobile devices are generally five years behind desk top devices in terms of processor and memory bandwidth

Five years ago desk top devices were sufficiently powerful to deliver a perfectly satisfying browser experience when combined with ADSL modems that were stable and reliable and cheap.

Five years ago mobile devices lacked the horsepower needed to run a decent browser and connectivity was slow and variable.

Today mobile devices will do most of the things that we can do on our desk top – problem solved?

Well not quite. In the meantime as the whole industry now realizes, added value has moved from the operator community to the search engine majors and the relatively diverse handset vendor community of five years ago is now effectively a two horse race with Nokia as the main casualty of the consolidation process.

And mobile devices still have a performance gap when compared to the desk top and converged smart TV devices.

The important difference is that the performance gap no longer compromises the user experience and that experience is enhanced rather than frustrated by the user interface – a transformation for which Apple rightly receive full credit.

Looking forward over the next five years it would seem that steadily improving GPS performance (the benefit of bigger more powerful satellites) will provide new opportunities to realise additional value from location based services. That money spent on Navteq might finally yield a return.

Ends

Links

Criteo

<http://www.criteo.com/>

Digiworld

<http://digiworld.org/en/Home/>

Study on Forensic Social Networks by the University of Cambridge Psychometrics Centre

<http://www.psychometrics.cam.ac.uk/news.49.htm>

<http://www.youarewhatyoulike.com/>

Previous RTT technology topics on Big Data and related subjects

3G Memory January 2000

http://www.rttonline.com/tt/TT2000_001.pdf

Smart Superphones December 2005

http://www.rttonline.com/tt/TT2005_012.pdf

Mobile Meta Data April 2006

http://www.rttonline.com/tt/TT2006_004.pdf

Other resources

Mathematical innovation and the role of 18th and 19th century English clerics in developing mobile internet technology are discussed in RTT's fourth book '[Making Telecoms Work- from technical innovation to commercial success](#)' available from the [RTT book shop](#).

Also in the Book shop is the new (second) edition of [LTE and the Evolution to 4G Wireless](#) published by John Wiley and Agilent Technologies and edited by Moray Rumney.

This takes you through the practicalities of Release 10 and Release 11 through 15 and includes useful insights on the test and measurement implications of each Release for conformance testing and manufacturing test.

Order via this link

<http://www.rttonline.com/bookshop.html>

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And a Sponsorship Request

Some of you have been receiving these monthly topics from us for nearly 15 years.

We enjoy writing them and some of you at least enjoy reading them and find them useful.

We have never set out to make any income from this activity but if you would like to make a small one off gesture of appreciation then you might like to sponsor an RTT led team who will be running a local marathon on May 5 in aid of adults with learning difficulties and disabilities

[This is the donation page](#)

<http://uk.virginmoneygiving.com/GeoffreyVarrall1>

And the Facebook fund raising page

<http://www.facebook.com/events/431846313570957/>

Any contribution very gratefully received!

Contact RTT

[RTT](#), the Jane Zweig Group and [The Mobile World](#) are presently working on a number of research and forecasting projects in the mobile broadband, two way radio, satellite and broadcasting industry. If you would like more information on this work then please contact

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