interxion™

INTEGRATE, INNOVATE, ACCELERATE

How big data can deliver big benefits

Technology and Innovation Perspectives investigate a potential view of the future. In this article we review the way data centres could be utilised to help maximise the potential of Big Data.

INTEGRATE, INNOVATE, ACCELERATE

Although dealing with big data is undoubtedly a challenge, it does have tremendous potential to transform your business. You just need to know how to make it work for you and who can help you to maximise its potential.

Imagine a world where big data isn't just about complexity and challenge. A world where your business doesn't just respond passively, but thrives on knowledge and insight.

A world that isn't just about finding enough bandwidth, speed and power to process masses of data, but about building better connections to use information more intelligently.

To make this world your reality, you'd certainly need to maximise your information-processing performance, but that won't build you better connections. How can you do both?

This is the question that organisations across Europe – and across industries – are asking us.

We believe the answer lies in a specific approach to data-centre services that Interxion has developed to meet customer needs.

THE VALUE OF A BIG DATA HUB

More than 1,300 businesses rely on Interxion to house their mission-critical applications and data in one or more of our data centres across Europe. They do so not just because we offer a superior cloud- and carrier-neutral environment with access to the widest range of connectivity providers and Internet exchanges; but because of the way we build 'hubs' in our data centres where communities of interest can cross-connect and work together more effectively to reach mutually beneficial goals.

For example, organisations developing, providing and receiving cloud services come together in our Cloud Hubs. Those involved in developing and delivering digital content come together in our Content Hubs.

What does this mean if you're interested in making the most of big data? It means that in an Interxion data centre campus you can have access to a highly connected environment that offers:

- The operational and technical excellence to overcome the information processing challenges of big data
- The opportunity to build direct connections with others involved in the same big data use-cases as you – data providers, data analytic service providers and other organisations interested in coming together to create a big data hub. In such a hub a big data community of interest can use high-throughput cross-connects to reduce big data transfer times from hours to minutes or minutes to seconds, enabling you to create, share, analyse and use hyper-comprehensive datasets in near real-time, efficiently and cost-effectively
- The ability to leverage Interxion's footprint of data centre campuses across Europe to get closer to where data is sourced and used. Why is this important? Because in a world of near real-time analytics, network latency can make the difference between 'just in time' and 'just too late'; and in a world of millisecond latency, improving performance is all about location, location, location. Wherever you operate, Interxion has data centres to enable the highest throughput and lowest latency, shaving valuable tens of milliseconds off highly time-sensitive transactions

For these reasons, we believe that that organisations can minimise the challenges and maximise the potential of big data by partnering with us to develop big data hubs; and they can do this at a close-to-zero incremental cost because of our pricing model. Hubs of the kind created in Interxion data centres are a natural way forward for big data applications. Let's explore why.

ENVISIONING THE NEW WORLD

Sentiment analysis is a relatively new application of big data technology, which enables the scanning of social media (Facebook, Twitter, LinkedIn, for example) to determine specific patterns in conversation topics, consumer purchasing behaviours, overall trends, language use and key influencers. A highly connected data centre hub provides the architecture in which this social media data can be delivered and shared – through cross-connects – in a fraction of the time required for systems connected at a distance.

The same applies to every other source of big data. Indeed, for all of the use cases we discuss, using a highly connected cloud- and carrier-neutral data centre can conservatively save costs equivalent to 0.3% of revenue purely by reducing the distance that large volumes of data have to travel – and therefore the network costs associated with the inexorable growth of data volumes. In addition, you could expect to see a data centre power efficiency improvement of 186%, as well as improvements in service reliability and physical security.

Let's look now at how big data could practically be used. To help us visualise the future, we have created five issue-led examples of how solutions could be developed and the important role data centres could play as part of that.

WHAT IS BIG DATA?

Reflecting common use, in this paper we're using 'big data' as a shorthand for the endeavour of extracting better insights from the information flowing into, through and out of organisational networks. The rationale for doing this is that the intelligence extracted from big data could hold the key to any number of business improvements, such as reducing customer churn, increasing sales or eliminating inefficiencies. Big data is often described as *'large volumes of data from a variety of sources delivered at velocity to create value'*.

ABOUT INTERXION

Interxion owns and operates more than 30 carrier- and cloud-neutral data centres in 13 cities across 11 countries in Europe. Our data centres host most of Europe's major internet exchanges and the PoPs of more than 450 carriers: from Tier 1 carriers to mobile network providers, from ISPs to CDNs. For more than ten years we've been driving innovation in data-centre design, build, operation, management and customer service to deliver the highest levels of reliability, performance and energy-efficiency.

MARKETING INTELLIGENCE

With the advent of big data, marketing organisations are on the brink of accessing a whole new world of intelligence. This world should radically change the marketing process, making campaigns better targeted and far more cost-effective. To consider how big data can change the world of marketing, it's helpful to consider different marketing intelligence functions and their associated goals:

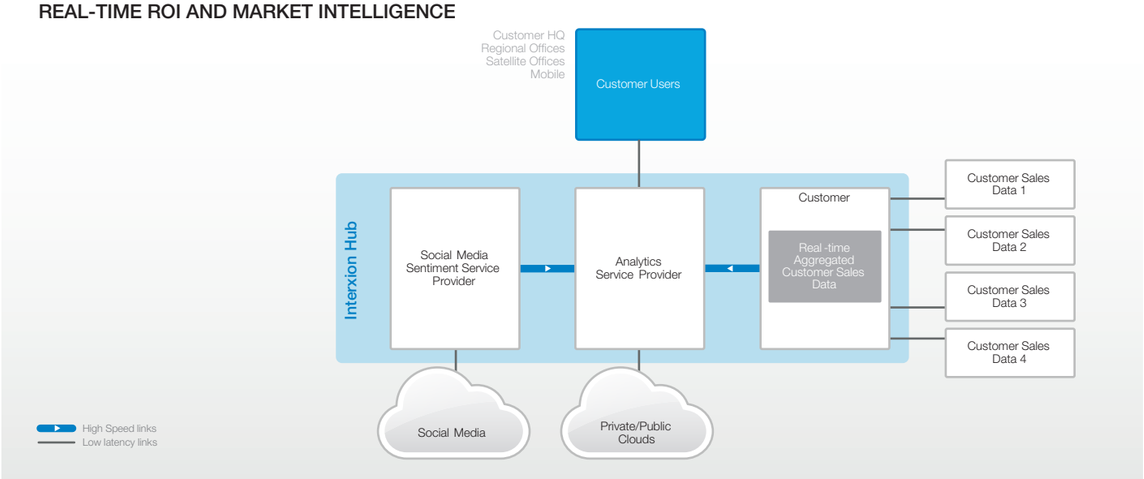
- Market intelligence: using intelligence to improve market knowledge and maximise return on marketing investment (ROMI)
- Customer intelligence: using intelligence to improve customer satisfaction and retention
- Competitor intelligence: using intelligence to enable faster, more effective reaction to the ever-shifting competitive landscape

These applications need to be real-time if they are to lead to actionable intelligence or tactical foresight rather than mere 'knowledge', which may come too late for campaign managers to act upon. Because of this, all three functions — and the results they deliver — will be dramatically improved if conducted through a big data hub that colocates those providing and those analysing and using the data: enabling real-time analysis to happen with the highest data transfer rates and as little latency as possible. An Interxion big data hub could increase data transfer times by 90% and reduce latency by 50% to promote real-time analytics.

Typical members of a marketing intelligence hub would be:

- Social media sites or sentiment service providers: providing data for sentiment analysis of the market, customers and competitors as relevant. Companies can use sentiment analysis to determine how effective various marketing channels are, identify peaks and troughs in activity and finely tune marketing spend in near real-time. They can continuously gather competitor events, developments, shifts, and changes to maintain a state of 'tentative readiness' and the ability to better predict the competitive market in which they operate
- Other data providers and internal data sources: providing data to be combined with sentiment analysis for the full picture. For example, customer intelligence sources might include web logs, internet search indexing, call-centre records, customer feedback forms and sales transactions. Competitor intelligence might bring together stock market and news-feed analytics, as well as datasets from market-information providers, product-review service providers and others
- Our analyses suggest that for a typical medium-to-large company the high throughput, low-latency cross-connects and real-time analysis provided by a big data hub could result in millions, even tens of millions of pounds saved, or revenue increased through:
  - Avoiding off target capital waste of approximately 10.3% of total marketing spend if used for market intelligence purposes
  - Increasing turnover by 0.8% if used for customer intelligence purposes
  - Improving turnover by 1.1% if used for competitor intelligence purposes

REAL-TIME ROI AND MARKET INTELLIGENCE



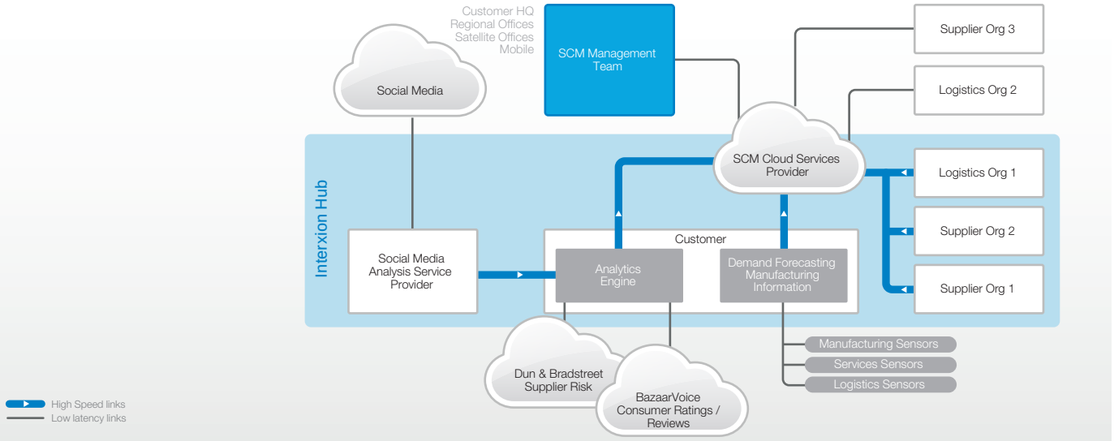
SUPPLY CHAIN MANAGEMENT (SCM)

In today's complex supply chains, 80% of data is from outside of the enterprise. Large manufacturers and retailers collaborate with dozens, even hundreds, of partners and logistic service providers to track products, run purchase-to-pay programmes and automate a myriad of supply-chain processes. These processes generate vast quantities of data that offer huge potential for improving the SCM process. By combining all this data in real-time and using pattern recognition and predictive learning systems to analyse it, supply chain managers can have minute-by-minute visibility of the supply chain and use this to optimise logistics and reduce costs.

A big data hub in an Interxion data centre can reduce logistic costs by 5.5% for a typical company, which could amount to millions or even tens of millions of pounds in cost savings for a medium-to-large company. These savings would be realised by increasing throughput by a factor of 10 and reducing latency by up to 50% in promoting real-time analysis between:

- Supply-chain partners and logistic service providers
- Social media sentiment analytic providers: to maintain real-time knowledge of customer needs and identify problems and issues with the supply chain
- Other external data providers, such as ratings- and review-information providers or supplier-analysis service providers
- Sensor data from SCM and enterprise resource planning systems

SUPPLY CHAIN MANAGEMENT



MANAGING COUNTERPARTY RISK

In response to the financial events of 2007-2009, G20 leaders mandated a comprehensive reform of the structure and transparency of over-the-counter (OTC) derivatives markets, which will result in significant changes in the trading, clearing and reporting of transactions. Specifically, G20 leaders agreed that, by the end of 2012, all standardised OTC derivative contracts would be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties.

Furthermore, bodies such as the Counterparty Risk Management Policy Group are urging financial service organisations to monitor risk exposures to all institutional counterparties in near real-time. While some larger organisations can achieve this twice per day or after overnight runs, a SimCorp poll found that 30% of buy-side firms stated that it would take them days or weeks to calculate their exposure across all holdings.[1]

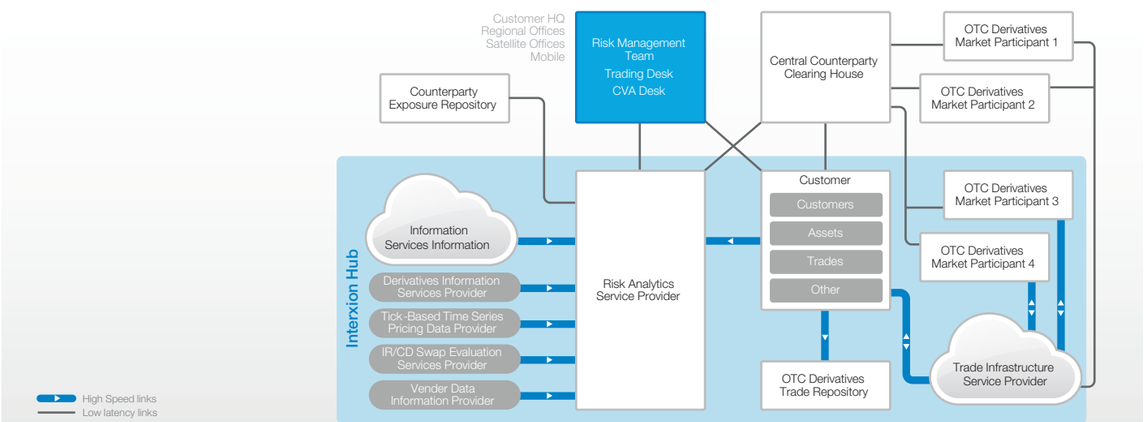
This kind of regulatory-driven requirement for real-time analysis can most efficiently be met in a big data hub of the kind we've been envisioning. Typical participants would be:

- Financial service organisations placing trades
- Multiple participants in the trades on both the sell-side and the buy-side of transactions
- Trade regulators
- Providers of information relating to markets, vendors, interest rate or credit default swap evaluation and pricing data
- The internal risk management team, trading floor, and credit valuation adjuster desks

Our analyses show that significantly increased data transfer rates (up to 10 times) and reduced latency (by up to 50%) within a colocation data hub would facilitate the ability to evaluate risk multiple times daily. This could save about 1.3% of total OTC derivatives trading value for a typical market participant, amounting to tens of millions of pounds of savings for a medium-to-large business.

1 Reported in Marketsmedia.com, "Regulations Drive Big Data–Part I", 9 March 2012.

COUNTERPARTY RISK MANAGEMENT



COMBATING INSURANCE FRAUD

Insurance fraud costs insurance companies in the UK £2.1 billion/year and policy holders an average of £50 per policy;[1] and fraud performed by criminal gangs is rising fast[2].

Analytics in automated fraud detection typically model 'normal' customer behaviour, which allows accurate flagging of outlier occurrences or suspicious divergent activity. Systems can also be designed to 'learn' new types of fraud as fraudsters change their methods.

Those involved in combating fraud are realising that the effectiveness of their efforts can be hugely magnified if they share data to enable the detection of fraudulent behaviour patterns industry-wide; and they're creating fraud detection networks to do so.

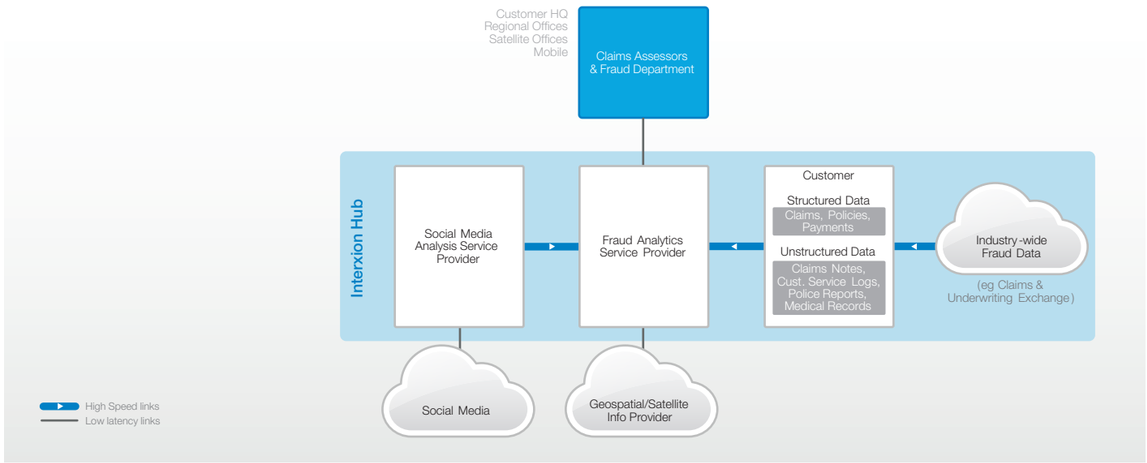
If the participants of such networks were to colocate their systems in a highly connected big data hub, capable of reducing data transfer times for large datasets by up to 90% and reduce latency by up to 50%, each insurance company within the hub could save about 0.9% of total claims by detecting fraudulent claims before pay-out occurs. This could amount to tens of millions of pounds saved for a medium-to-large company. Typical participants in an Interxion anti-fraud hub would be:

- Insurance companies, who could share claims data directly with one another, if desired
- Industry fraud data providers, such as the Claims and Underwriting Exchange and the Motor Insurance Anti-Fraud Theft Register
- Other external data providers, such as the providers of geospatial and satellite data
- Social-media sentiment analytic providers

1 According to the Insurance Fraud Bureau.

2 Almost 20% from 2011, according to an Insurance Fraud Investigators Group (IFIG) report in Sept. 2012.

FRAUD DETECTION



SMART CITIES: IMPROVING TRAFFIC MANAGEMENT

Innovation is essential to growth in an increasingly competitive and mobile worldwide marketplace, and those cities that can provide the most attractive lifestyle are most likely to grow and thrive. Traffic management is a key area where big data solutions can be used to achieve significant improvements in the quality of life and satisfaction of city residents, as well as increasing productivity and city GDP.

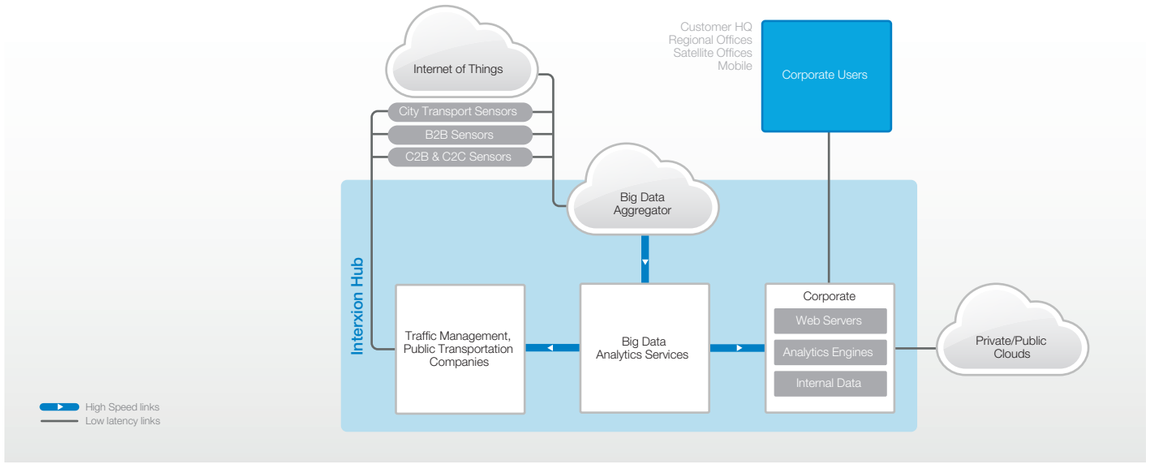
As with supply chain management, the use of big data technologies in traffic management involves integrating data as quickly and efficiently as possible from a wide variety of sources and using pattern recognition and learning systems to analyse it. This data comes from many sources:

- Traffic management agencies
- Road and rail companies
- Logistic service providers
- Other data providers such as companies responsible for managing roadworks, and emergency-response units

The analysis of this data would be much more effective if it were conducted in a single city hub of cross-connected systems which were gathering and analysing it, with low-latency links to transmit the resulting information to those who need it, in real-time.

We believe that a traffic-management big data hub in an Interxion data centre could increase data throughput ten-fold and reduce latency by 50%, resulting in improved productivity and an increase in city GDP of up to 0.2%. This could amount to millions or even tens of millions of pounds of additional tax revenue for a city council.

SMART CITIES



BIG DATA: THE BRAVE NEW WORLD

The world of big data is a place ripe with opportunities for businesses willing not just to process the data but to integrate multiple datasets to create entirely new and more powerful ways of doing business.

At Interxion we create hubs, including big data hubs, where communities of interest can work together to reach mutually beneficial goals. So whether it's marketing, SCM, financial risk exposure, fraud prevention, traffic management – or an entirely different project that requires you to maximise your use of big data – we can help.

Big data isn't just about processing more. It's about processing better and faster. In coming together, we integrate. In partnership, we innovate. And with the means to collaborate more fully, we accelerate.

INTERXION AND BIG DATA

Interxion data centres provide highly connected, low-latency, high-performance computing environments that enable communities of interest to reduce the costs of creating real-time big data solutions that work at speed to deliver value from large volumes and varieties of data. We make this possible in big data hubs in our data centres across Europe.

WELCOME TO THE WORLD OF BIG DATA.

The future maybe different to the perspectives we have presented, so to discuss your views or your big data needs, please contact us:

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