

# Innovative Data

Utilising data more effectively in the life science and healthcare sectors would reveal vast opportunities to add value to the pharma industry's logistic needs

Vivian Berni at LifeConEx

Life sciences and healthcare organisations have an abundance of data at their disposal. Even as you read this article, bytes of information are being exchanged, stored, and viewed across the internet and around the world. The accessibility of mobile devices and the rise of the internet has increased our consumption of data to new overwhelming heights, often challenging our ability to process it all. With so much background noise, which signals do we listen to and translate into insights worthy of actions?

The ability to quickly turn raw data into useful information is an asset with tremendous competitive advantage for bio/pharmaceutical organisations. When speaking of cold chain logistics, maintaining product integrity is the foundation of the ultimate goal of the life sciences and healthcare industry – patient safety. Through the careful analysis of data, leading organisations are able to optimise their processes, ultimately strengthening their cold chain networks.

## Data: The Foundation

What is the meaning behind 'data'? According to IBM, "90 per cent of the data in the world today has been created in the last two years alone. This data comes from everywhere: sensors used to gather climate information; posts to social media sites; digital pictures and videos; purchase transaction records; and cell phone GPS signals to name a few. This data is big data (2)."

Transporting life-saving products to markets throughout the world requires cold chain shipping, which keeps products at a consistent temperature from point of origin to final destination. Monitoring temperatures and maintaining the proper packaging environment throughout the transportation process is critical to ensuring the viability of these high-value shipments. Throughout this intricate process, data streams from a variety of

sources across the transport chain. By capturing increasingly accurate levels of information, life sciences and healthcare organisations can utilise data effectively and creatively at scale to drive efficiency and quality in the supply chain.

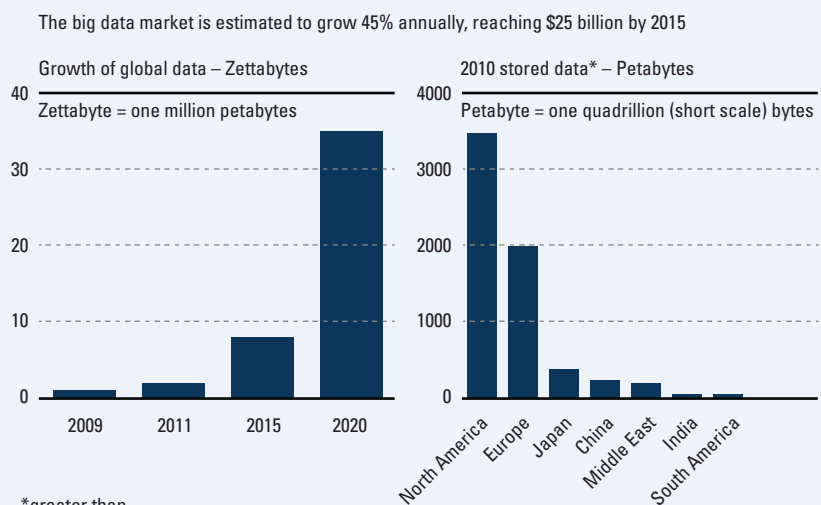
## Cold Chain Analytics and Optimisation

In a world where data rules, the use of analytics to monitor and optimise information on a daily, weekly and monthly basis provides insight that determines patterns in data aggregation. Data becomes powerful once it is gathered, cleansed, organised and evaluated. Data analytics can be as simple as finding temperature excursions, or identifying frequency of shipments. It can also be utilised for something as intricate as identifying SOP performance to determine the effectiveness of processes to mitigate risk. Furthermore, it can consist of spreadsheets or data extracted from multiple platforms and formats; this represents one of the key challenges of understanding 'big data'. When data is unstructured, it can be intimidating and overwhelming; an untapped source of knowledge.

## A Human Touch

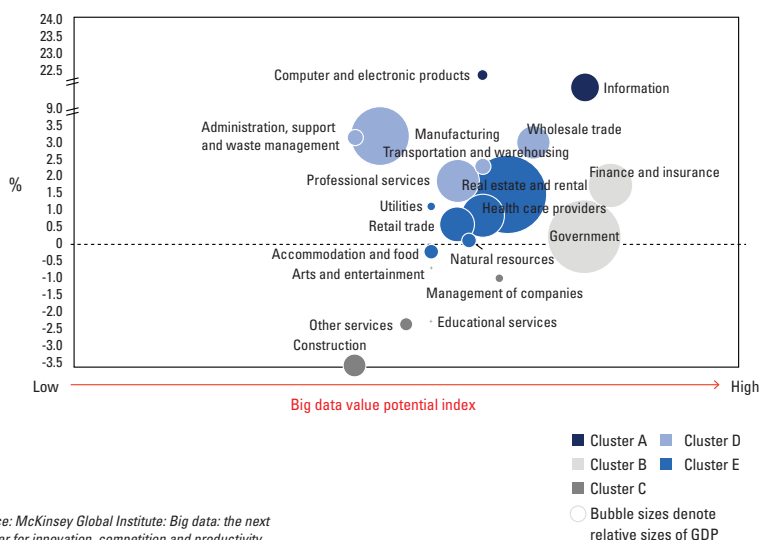
While massive amounts of data are collected by sophisticated technology, machines constitute only one

Figure 1: Big data growth



Source: Big data – graphic of the day, Thomson Reuters (1)

**Figure 2:** Some sectors are positioned for greater gains from the use of big data: historical productivity growth in the US, 2000-2008



Source: McKinsey Global Institute: Big data: the next frontier for innovation, competition and productivity

part of this story. Humans add an essential element to data – interpretation. Tools devoted to the analysis of data facilitate and enable problem solving. When considering the life sciences and healthcare industry, and the transportation of temperature-sensitive products, investment in the data analysis tools requires a human touch so that deep, meaningful and insightful information is extrapolated. This requires expertise, not only in data as it applies to business intelligence, but also in the cold chain logistics industry as a whole.

As a result of data availability, the growing trend is for life sciences and healthcare organisations to make their internal processes more rigorous and to demand more quality assurance measures from their cold chain logistics providers. Eventually, health authorities and regulatory agencies will demand data sets for all temperature-sensitive products undergoing import and export. Through collaborative partnerships, open communication and data awareness, teams will be able to use information in powerful ways.

### Goals of Data Interpretation

The goals of cold chain management include patient safety, product integrity, regulatory compliance, process optimisation and cost optimisation. When business intelligence is applied to the cold chain, exploring some of the unknowns and potential gaps within the logistics chain becomes easier. How can the interpretation of data support the objectives of life sciences and healthcare organisations when shipping products?

### Identify What Works

In a typical cold chain process, there can be more than 10 parties involved in the transportation of temperature-

sensitive products. Having detailed visibility and monitoring across the entire cold chain results in the integration of data, providing opportunities to identify what works well, what needs to be fine-tuned, and what needs major work. For example, partners, vendors, and other collaborators in the process can be evaluated based on performance measurements and be recognised for services rendered.

### Improved Performance

In order to determine how the process can be improved, we must address the questions that may hinder progression. How can life-saving products be delivered in shorter transit times? What are the best routes based on the origin and destination? How does weather and packaging availability

affect the integrity of the products being delivered? With a better understanding of data, decisions can be made with knowledge to support the business objectives. For example, processes can be analysed, equipment inventory optimised, and workflows streamlined.

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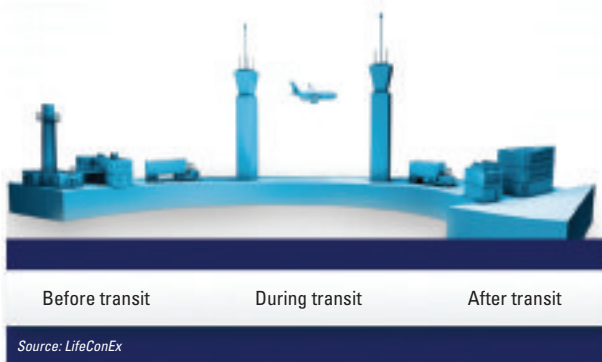
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**Overcoming Obstacles**

Through effective data analysis, you can look at hundreds of possible risk points that will affect your temperature-sensitive and high value products during their journey. Analytics and optimisation of data keeps life sciences companies accountable both in real-time and historically, providing experts with unprecedented control over critical situations. It also allows them to save products if and when intervention is necessary, and grants the foresight to avoid those situations altogether, resulting in risk mitigation. For example, historical data can be analysed to evaluate trends that highlight areas of higher risk and reduce the chances for product loss.

Figure 3: Full control of your product



**Optimising Opportunities**

Technology plays a vital role in the transport of temperature-sensitive products. The effective use of big data has the potential to transform life sciences and healthcare organisations and to deliver a new wave of productivity growth. Using cold chain data will become a key basis of competition. It is critical to recognise the potential opportunities, as well as the strategic threats that data represents – the ability to update strategies quickly and stay ahead of the competition. Insights into what drives efficiencies and cold chain excellence equate with continuous improvement and regulatory compliance.

**Innovating into the Future**

Looking at data from the perspective of innovation reveals substantial opportunities to add value to the life sciences and healthcare industry’s logistic needs. At the same time, current

tendencies limit the usage of data. To translate the information into actionable priorities requires proper infrastructure, human interpretation and vision. With this in mind, data can indeed aid life science organisations process, and visualise and create valuable insights into the cold chain landscape. Business intelligence will continue to contribute toward organisational success and inspire creativity to address the complex challenges of temperature-sensitive logistics. Data and business intelligence opens opportunities for business resilience by prompting the building of connections between today’s needs and tomorrow’s challenges. When this concept is applied to the transport of medicinal products, cold chain data interpretation is enriched. How does your organisation respond to the four dimensions of data: volume; velocity; variety; and veracity? Maybe it is time to ignore the noise and seek the signals.

**References**

1. Trevethan C, Big data – graphic of the day, *Thomson Reuters*, May 2012. Visit: <http://blog.thomsonreuters.com/index.php/big-data-graphic-of-the-day>
2. Bringing big data to the enterprise: what is big data? 2012. Visit: [www-01.ibm.com/software/data/bigdata](http://www-01.ibm.com/software/data/bigdata)
3. Manyika J, Chui M, Brown B, Bughin J, Dobbs R, Roxburgh C, Hung Byers A, Big data: the next frontier for innovation, competition and productivity, *McKinsey Global Institute*, p9, June 2011

**About the author**



Vivian Berni is the Strategic Marketing and Communications Manager at LifeConEx. She joined the Strategic Innovation team in 2010, bringing with her experience in innovation, marketing, and finance. Prior to joining LifeConEx, she began her career in finance at Lehman Brothers. Thereafter, Vivian explored roles in marketing and strategy. Her passion for cultures has taken her to various countries throughout the world. She is a polyglot and has been noted for her ability to adapt to diverse cultures. Vivian attended the University of Miami where she earned a BBA, with a focus on International Finance and Marketing. Email: [vivian.berni@lifeconex.com](mailto:vivian.berni@lifeconex.com)