



## Zeroing in on root cause analysis

Introducing cold chain management for life sciences enabled by Oracle IoT

By regulatory mandate, life sciences companies must maintain complete control over the temperature and tolerances of perishable goods as they move throughout the supply chain—sometimes referred to as the “cold chain.” Yet, during both routine and for-cause regulatory inspections, failure investigations are often cited as a deficiency. There are many reasons why companies often struggle with root cause analysis within their cold chains, but one of the biggest is

complexity. Even though supply chains are extending further and further, many companies still take a manual approach to root cause analysis, which can make the process lengthy, expensive and bound by resource constraints. Furthermore, the conclusions reached by the investigation are only as good as the historical data upon which the analysis is based. To monitor their environmental parameters, many companies use unconnected temperature loggers, manually linking

them to shipments through cumbersome paper trails. This means they do not have ready access to high-quality contextualized data, either historical or real-time, at critical points in their cold chains. This situation can expose them to an array of risks across sourcing, production, transportation and distribution, and when an excursion occurs, it makes it difficult and costly to find out why. This situation, however, is about to change.

# IoT changes the game

As a disruptive technology, the Internet of Things (IoT) can enable critical points in an environmentally controlled supply chain to be connected and digitized. When designed and implemented well, this network of sensors can produce accurate, real-time data, which can be used to perform root cause analysis with unprecedented speed, and can also provide a control tower view of the supply chain. In working with the capabilities of the Oracle IoT platform, Deloitte saw an opportunity to combine sensors, connectivity and demonstrated process flows to specifically address the challenges faced by life sciences companies related to remaining compliant and investigating excursions. To help companies alleviate these costly pain points, Deloitte's Oracle Practice is proud to introduce cold chain management in life sciences enabled by Oracle IoT.



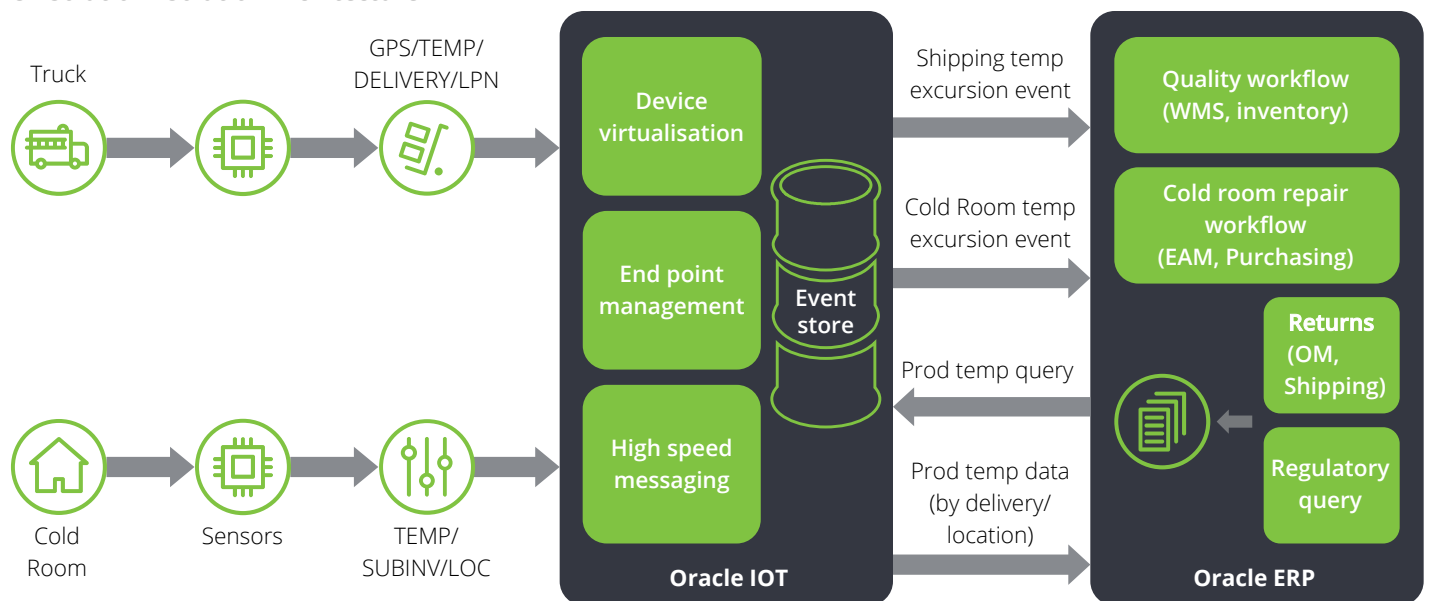
## The Business Imperative: Excursion costs

Excursions are a big financial drain and present a significant opportunity for value capture. It can cost thousands of dollars and take several weeks to complete root cause analysis). It costs the industry billions of dollars in lost product and productivity.

# About the solution

Our Oracle-enabled cold chain solution utilizes cutting-edge connected sensor technology and the Oracle IoT platform in conjunction with middleware and cloud/on-premise ERP solutions to provide accurate data about the environmental conditions within the cold chain. This also provides organizations with an unprecedented ability to respond to temperature events and reduce losses and improve compliance. The solution further aggregates and organizes this data, and thus can provide ready access to quality records and expedite root cause analysis. Flexible process maps and pre-defined templates accelerate the requirements definition phase and allow the solution to be tailored to specific business needs.

## IOT Solution - Solution Architecture



The solution has been designed to generate return on investment by improving compliance and lowering costs. Specifically, cold chain management for life sciences enabled by Oracle IoT can:

- Provide support for root cause analysis
- Shorten investigation timelines
- Enhance availability of data for quality records
- Provide the foundation for implementing effective corrective and preventative actions and reducing product losses in the supply chain

# Why Deloitte

Delivering the benefits of more efficient root cause analysis and easier compliance requires a combination of capabilities, including industry-specific knowledge of leading practices; functional specialties such as strategy and operations, and a highly experienced global Oracle practice with deep technical skills spanning cloud, ERP and disruptive technologies. Deloitte not only offers these diverse capabilities but also blends them effectively. This allows us to operate at the “innovation edge,” where our practitioners creatively apply disruptive technologies to resolve long-standing business challenges.

As a testimony to the effectiveness of our approach, Deloitte recently earned two top cloud-related honors in the 2017 Oracle Excellence Awards—one for Oracle PartnerNetwork (OPN) Specialized Partner of the Year – North America in the category of Software-as-a-Service (SaaS) Partner of the Year, and one for OPN Global Cloud Transformation. These regional and global achievements recognize Deloitte’s position on “the innovation edge,” acknowledging its impact in the market and its ability to help Oracle customers around the world to transform into digital organizations.

# Contact Us

One of the primary goals for many life sciences companies is to remain compliant with regard to their cold chains. The ability to perform root cause analysis efficiently and effectively goes a long way toward achieving this goal. The value proposition is clear: faster root cause analysis can lead to dramatic cost savings. To learn more about cold chain management in life sciences enabled by Oracle IoT and how we can help you to resolve your specific supply chain challenges, please contact:

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