Clear visibility into supply chain complexity

The Internet of Things is refining the capabilities of the supply chain to reduce theft, increase visibility and transform legacy complexity.

Chetan Goshalia, chief sales and marketing officer at SqwidNet

In January 2019, the MSC Zoe lost more than 375 cargo containers in the North Sea, some of which contained organic peroxides, hazardous materials with explosive capability. The cost of locating and retrieving the cargo, some of which had sunk to the depths of the ocean, was born by MSC. The hunt was costly and time-consuming.

In February 2019, the Safety and Shipping Review released its 2019 report that revealed the cost of the around 230,000 insurance industry claims over the past five years had almost reached $10 billion.

The international shipping industry is just one part of the complex supply chain whole with fraud, theft, human error and loss peppering statistics across country and industry. The truth is that cargo theft has been around since the days of swashbuckling pirates and horseback bandits but today the supply chain has one weapon that can potentially save the cargo and costs – the Internet of Things (IoT).

This technology has the potential to provide organisations with critical insight into cargo movement throughout the supply chain by capturing data across every point of the cargo's journey. The sensors used by IoT have not only become far more cost-effective, but they are equally adaptive and capable of handling variable conditions as they track containers across land, air, and sea. These sensors provide a level of visibility into the supply chain that has previously been only imagined and, with the evolution of the Sigfox network, the data provided by these sensors is about to become even more relevant.

"The Sigfox network allows for billions of devices to connect to the internet in real time, across vast distances," explains Chetan Goshalia, chief sales and marketing officer at SqwidNet.

"Developed by SigFox, this global network overcomes some of the biggest barriers to IoT adoption within the supply chain – cost, global scalability, and energy consumption. This low-power network is capable of collating and sending data in short bursts to any location in the world, in real time. This means that the data provided by the sensors within the supply chain can be analysed and tracked in real time from almost any location."

Shifting the baseline of supply chain efficiency

Access to a network of this capability can fundamentally shift the baseline of supply chain efficiency. In the past, data and insight were sporadic or reliant on connectivity provided by other systems or solutions. With the Sigfox network, there is an added layer of security in that the devices send their insights directly to the relevant source, but don't receive data.

The latter can be implemented in specific use cases but ultimately, the data delivered by the sensors within a tightly configured Sigfox network allows for operations to assess the status of any given shipment at any given time. The low power demands allow for consistent monitoring of cargo across vast distances and timelines, plus the constant network allows for regular, real-time insight into cargo status.

"The value in being able to determine a fault, loss or an error before it becomes a costly mistake or theft, is inordinate," says Goshalia. "Consider the savings for organisations within the supply chain as well as the insurance companies that carry the cost of these losses within the supply chain?"

The ability to track temperature, location, speed, and geographical location, among many other data points, also allows for the organisation to micro-manage complex shipments and routes. Some of the world's largest retail outlets juggle suppliers across variable distances and their own chains from global locations, so visibility into every step along the way can significantly reduce the ongoing complexities that pepper the process.

Tracking cargo

Instead of a broken refrigeration unit discovered part way along the route, too late to salvage the contents, it can be caught early and the loss can potentially be mitigated. The same applies for lost cargo at sea – while IoT sensors can't stop the weather, they can locate the cargo containers. The network can also be used to track particularly hazardous materials within a shipment of standard items to ensure that they are handled carefully and prioritised in a track and trace.

"Along with minimising the bottom-line costs for the business, the blend of IoT technology and the Sigfox network can fundamentally transform how the supply chain engages with its data," adds Goshalia.

"The information gleaned across multiple shipments can locate bottlenecks, isolate areas of concern, improve yard efficiencies and so much more. It can also play a more than important role in ensuring that stores have stock and reputations remain intact."

The harsh market reality is that the customer won't care if the supply chain was attacked by a flurry of tornadoes or lost at

sea. They want their products and they want them yesterday. While IoT isn't the magic wand that can remove the impact of weather and unexpected loss, it can help the supply chain gain an incredibly detailed level of control over its products and services. This control can be used to streamline, transform and redefine efficiencies.