



Smart cylinder and Industry 4.0

Monitoring stock levels and re-ordering in time to avoid stock-outs whilst minimising inventory is a process which easily lends itself to automation, particularly with the advent of inexpensive, low power wireless networking. Combine this however with the Internet of Things and Cyber-Physical Production Systems (CPPS) and there is the possibility of a achieving a step-change in productivity.

Mobile app for smart gas cylinder

We recently developed a mobile app, for an industrial gas supplier that is able to interrogate, on request, a smart gas cylinder using Bluetooth LE wireless technology.

The app displays the amount of gas in the cylinder and estimates the time left before the cylinder will be empty. Upon entering a workshop or storeroom the app automatically scans the smart cylinders and displays the cylinder contents

Clearly this is useful for gas consumers as they can very easily see precisely how much product they have on-site (inventory and WIP) and it will help them decide when to order replenishments and thus more closely match supply to demand.

But what if the objective was to alleviate the burden of monitoring and re-ordering on the part of the gas consumer?

How could we extend connectivity and realise the productivity benefits associated with Industry 4.0?

Smart gas cylinder supply chain

Harnessing the Internet of Things (IoT) and either Bluetooth LE (as now) or an alternative, low power, wide area network technology (like LoRa or SigFox) these smart cylinders could be incorporated into a smart supply chain (see Fig. 1) that also leverages the potential of networked manufacturing.

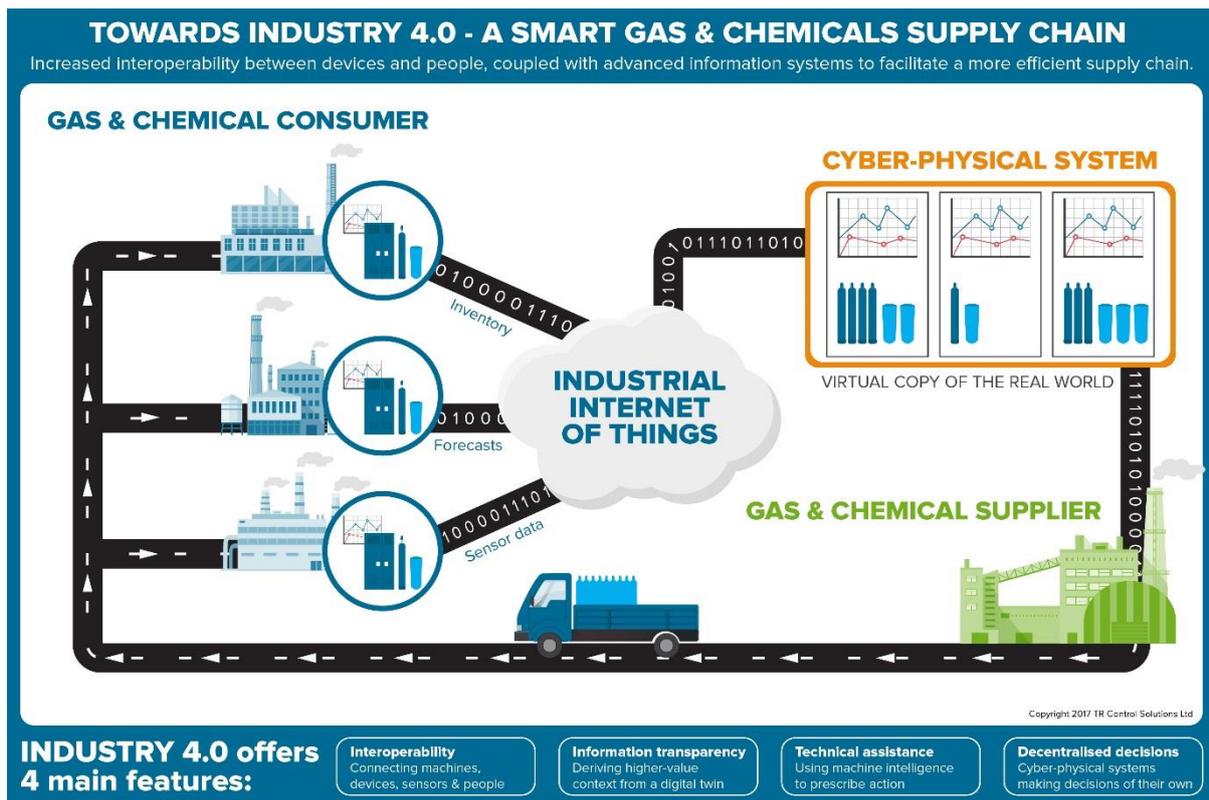


Fig. 1

Replenishment cylinders could be filled and delivered to the customer without the need for human intervention in the administrative process, thus increasing productivity but whilst avoiding stock-outs and minimising inventory.

This could be done today and also in the future with driverless trucks.