INTEGRATED ENGINEERING SOLUTION

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"Smart Metering" by Kamstrup

Gone is the time when mechanical meter only provides means of measurement for simple billing purposes. Intelligent metering nowadays offers various services valuable to both utilities, commercial and residential end users. These services with IoT and data analytics integration, have changed how data is extracted from the meters, as well as contributing to technological advancement for such systems. Besides data reliability and convenience, modern metering technology plays an increasingly important role in improving process safety and performance; ensure production time and energy wastage on instrument maintenance are kept to minimal.

flowIQ® 2200

flowIQ® 2100

flowIQ® 3101

flowIQ® 3200

Connection Network

Internet of Things (IoT) paradigm is our current reality. Development of integrated circuits are driving down the cost of radio transceivers, leading to an increasing number of everyday objects connected to the internet. This network of computers helps bridging the technological gap between physical and digital world. By collecting real-time data from network of device, consumption patterns can be analyzed to influence production schedule. For instance, smart meters can predict our energy usage at different periods of the day, set energy usage

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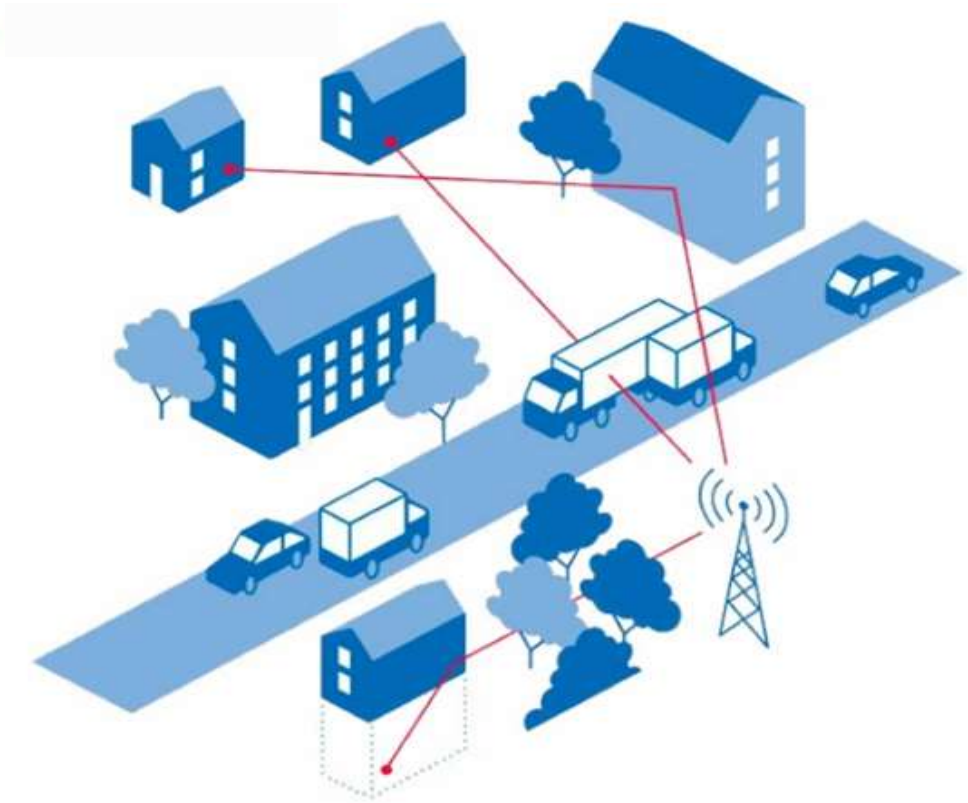
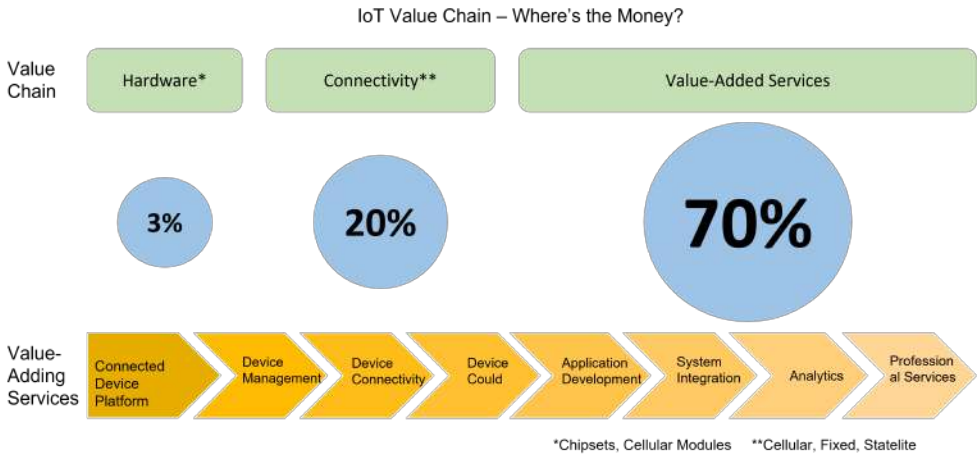
recommendations and ensure stable supply at peak hours; all these happen just when our cell phone GPS enters our home zone.



Examples of the signal path

Potential of Data Analytics

Companies can gain valuable insights in process optimization through data analytics. Taking utilities as an example, data extracted from smart meter are used to reduce production and distribution costs, enhance customer service, and provide consultation in energy optimization. These value adding activities help them in reducing operational expenses (OPEX) and meeting Corporate Social Responsibility (CSR). As such quantifiable values may easily be reflected on the balance sheet, benefits incurred will easily boost industry wide adoption.



Expected Value Distribution for the IoT

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More Benefits to be Discovered

With automated data measurement and monitoring, smart meters have been employed in solving prevailing challenges. In water utilities for instance, non-revenue water (NRW) has been a problem that translate to affect the bottom line of operations. NRW occurs when systemic leaks in piping infrastructure, aging meters, or theft creates an imbalance between the quantity pumped and the amount consumed. Through intelligent real time monitoring of the water flow in the distribution network, water utility will be able to identify and locate leaks. It is even possible to predict risky pipe sections that is due for maintenance; effectively prevent bursts and major service interruptions.

In coming years, numerous IoT applications are expected to emerge. Valuable data captured from smart meters and network devices can communicate through transceivers, bringing effective and customed user experience. Knowledge capture can provide operation advise to decision makers with the aim of limiting energy consumption, preserving resources, or simply best meeting clients' convenience in promoting retention; all such advantages will not be possible without the contribution of smart meters.

What's Next

The Application of Thermal Energy Storage Tank for Data Center