KORE

IoT Innovations for Alleviating IT/OT Convergence Challenges

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Many organizations – especially those in industries such as industrial, healthcare, and fleet, to name a few – rely on two primary technology groups and systems to execute business operations: information technology (IT) and operational technology (OT).

IT

Enables the creation, processing, storage, and secure exchange of electronic data through the use of networking infrastructure and devices, computers, and processes.

OT

Enables the monitoring and control of physical device or equipment performance through the use of specified hardware and software.

Until recently, the vast majority of OT tools have been mechanical and manually implemented without the use of digital controls. Unlike IT, which fundamentally includes communications, OT has not traditionally been a networked technology. With fragmented, disconnected IT/OT processes and management, organizations are faced with challenges including limited resources (as most OT specialists are not IT specialists, and vice versa), complex working environments, and high operational costs.

IoT Enables the Convergence of IT and OT

IoT technologies are more widely available than ever before, presenting a significant opportunity for businesses to leverage IoT to converge and transform IT and OT domains. The integration of connected sensors and wireless networks enables companies to modernize legacy OT systems to converge with IT systems through automation, communications, and networking.

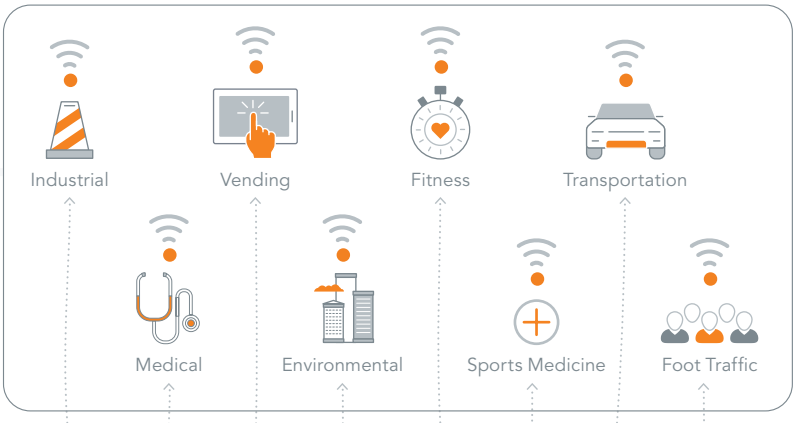
SaaS	IaaS	PaaS
Software-as-a-Service	Infrastructure-as-a-Service	Platform-as-a-Service

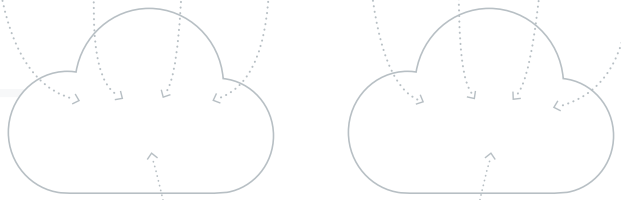
Operating Technology (OT) Domain

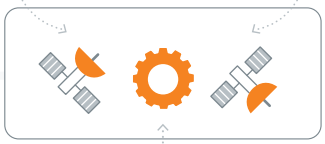
IoT Endpoints represent the "things" in Internet of Things that are essentially connected sensors or devices that are used to monitor or measure physical, quantifiable parameters such as location, moisture, pressure, speed, movement, temperature, etc. The endpoint capabilities and ability to support data transfer among other devices and systems is specific to the intended design and use case for the endpoint.

Intelligent Gateways are used to aggregate and manage the potentially massive amounts of data coming from IoT endpoints, acting as a communication bridge between IoT endpoint networks and cloud servers. By analyzing the data received from various endpoints, intelligent gateways are capable of prioritizing critical or high priority information to primary systems. More robust gateway technologies can also execute more complex tasks and automatically take action based on data its received.

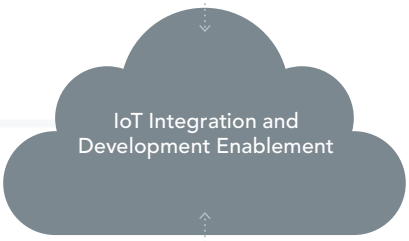
IoT Connectivity facilitates the transfer of data among IoT endpoints, intelligent gateways, cloud servers, and business applications. There are a multitude of connectivity options available – including cellular, satellite, Blutooth, WiFi, and LoRa to name a few – that all have specific capabilities in areas such as range, bandwidth, battery life, throughput, security, scalability, mobility support, and cost.





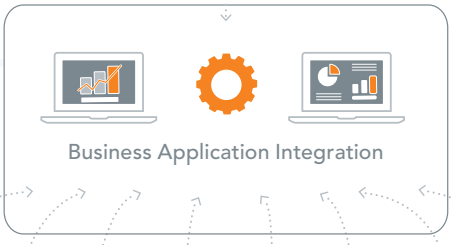


Cloud Services enable the processing and storage of the massive amounts of data received from a variety of endpoints monitoring a variety of endpoints, allowing them to interact with a broad range of business systems and downstream user applications. Key of cloud service offerings include SaaS solutions that provide on-demand applications, IaaS solutions that provide a virtualized environment for system deployment and computing resources, as well as PaaS solutions that enable development of applications and integration among existing applications.



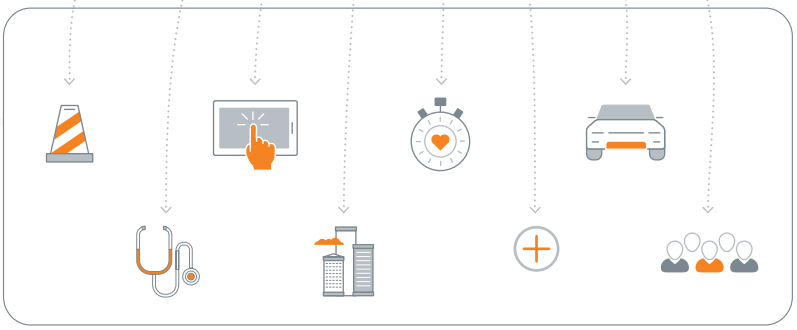
Information Technology (IT) Domain

Business Systems such as CRM, ticketing, or ERP are integrated with the cloud services, enabling them to benefit from the IoT applications and related data analysis resulting in in enhanced capabilities, more intelligent business decisions, and even the creation of new or improved product and service offerings.



User Applications

- **Industrial:** continuous monitoring of critical industrial equipment enables early detection of potential issues, enabling preventative maintenance and reduced downtime
- **Healthcare:** monitoring real-time glucose levels for diabetes patients provides automated communication of results to desired caregiver, enabling more efficient patient care and improved quality of life
- **Logistics:** monitoring the conditions of cold-chain shipments enables safe delivery of perishable products, contributing to improved customer satisfaction and reduced waste
- **Fleet:** measuring fleet vehicle speed and engine activity enables accurate monitoring of driver behavior, encouraging improved driver safety

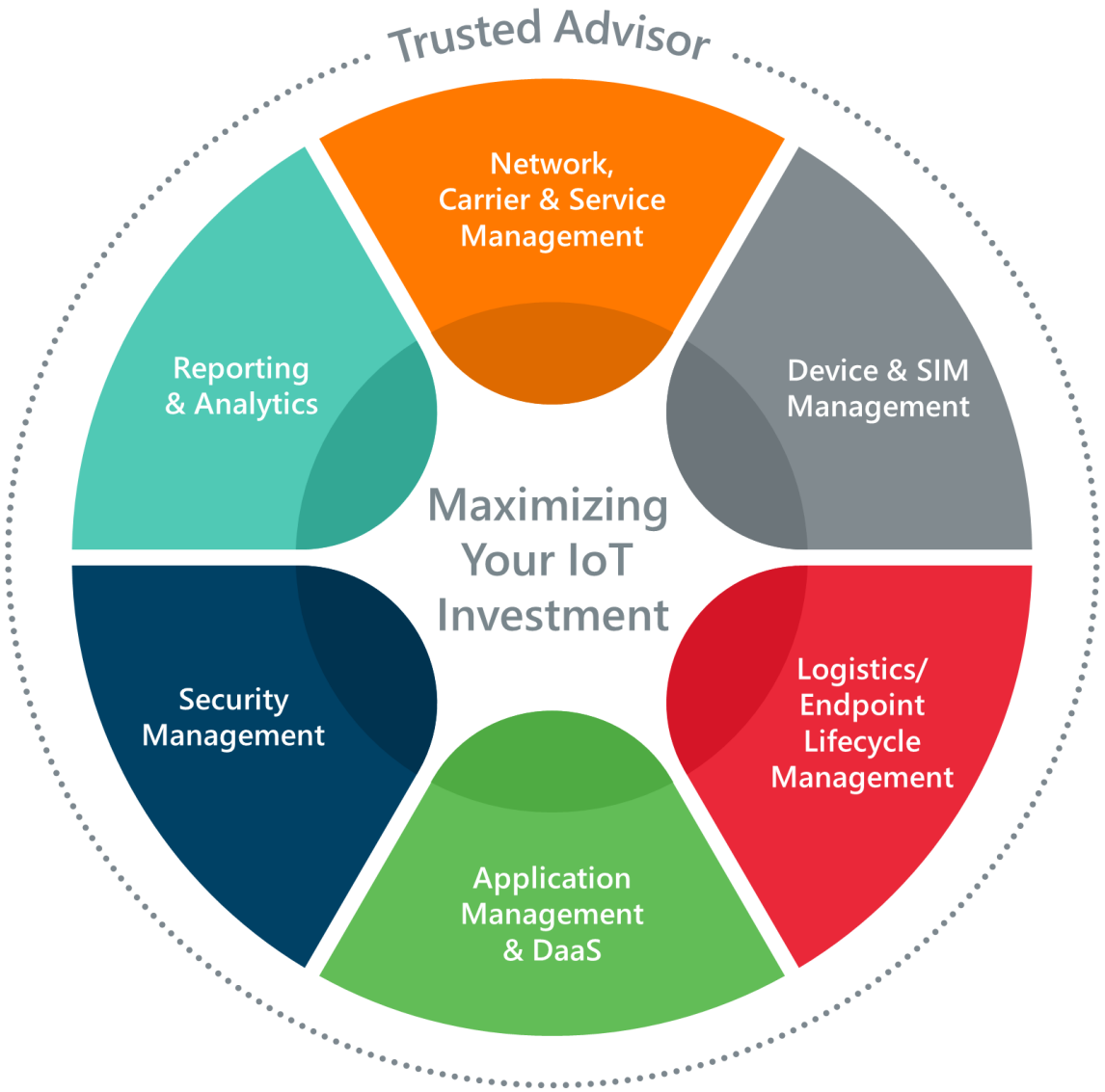


Next Steps and Implementing IoT

The IoT represents a promising world of technologies for organizations that could benefit from the convergence of IT and OT domains, enabling them to enhance and automate operational efficiencies, streamline working environments and processes, generate new business intelligence, and ultimately contribute to the bottom line. With that said, IoT technologies can be extremely complex, challenging organizations to deploy, manage, and sustain the optimal mix of components and systems for their unique business needs. At the most basic level, there are six critical capabilities that must be considered to ensure a successful IoT initiative:

KORE's Trusted Advisor Approach

Simplifying IoT. Maximizing Investments.



For more information, reach out to KORE to learn how we can simplify the complexity of IoT for your business.

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