

The rise of The Internet of Enterprises

By [Helmut Resisinger](#)

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In today's digital economy, data is a highly valuable asset. Unlocking the insights that data holds is crucial to innovation, providing superior customer services and competitive advantage.



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Enterprises are producing more and more data. According to IDC, 175 zettabytes of data will be generated annually by 2025. This is over ten times the 16.1 zettabytes generated in 2016. The analyst firm predicts enterprises will create nearly 60% of this new data.

In the past, consumers were responsible for much of their own data, but their reliance on and trust of today's cloud services, especially from connectivity, performance and convenience perspectives, continues to increase.

This datasphere is notable not only for its size, but also its dynamic nature and complexity, helping drive our physical world from smart factories to autonomous cars and smart cities. IDC forecasts that more than 150 billion devices will be connected across the globe by 2025 with the growth of IoT, most of which will be creating data in real time. For example, automated machines on a manufacturing floor rely on real-time data for process control and improvement. Real-time data is forecast to grow from just 15% datasphere in 2017 to nearly 30% by 2025.

The third wave of the internet

This heralds the beginning of the third wave of the internet: what we at Orange Business Services call the "Internet of Enterprises" era, in which connected objects and workflows are being adopted at scale. This third age builds on developments that have come before.

Back in 1985 we saw the first internet revolution. Global infrastructure was built out to allow new ways of communication – from email to voice over IP, video calls, discussion forums and the web.

From around 2000, we saw the dawn of the second phase in the internet's evolution – the mobile and social era. This has been all about sharing emotions through photos and video streaming – the world of “me, my selfie, and I.” While the invisible hand of Adam Smith is advancing markets and coordinating economic activity, the invisible power of data is optimising the Internet of Enterprises.

The increased significance of data sharing

In the Internet of Enterprises, data needs to be shared with the extended enterprise or business ecosystems to deliver greater value to customers. All parts of the economy have a production or operational environment where data needs to be shared. This is true for all sectors – from manufacturing and oil and gas to retail. Even those the business may not have considered – such as banks or law firms – now have internet-enabled CCTV cameras, HVAC (heating, ventilation and air conditioning) units and elevators, which are serviced by third parties who access data to provide predictive maintenance. This creates potential security risks that need to be mitigated.

Business ecosystems, meanwhile, work to bring multiple players of different sizes and types together with their data to build scale that is beyond the capacity of a single organisation – or in some cases traditional industry such as manufacturing, logistics and retail.

Making data work

By its very nature, the Internet of Enterprises churns out gargantuan amounts of data. This is where the biggest challenges lie. How can businesses manage, store, analyse and share this data securely? Here are some key considerations:

First, data often needs to be managed in real time when it is needed for the continuity of smart production lines and transport networks, for example, by the business ecosystems that support them. A subset of this data needs to be super real-time with sub-millisecond latency – for example, autonomous cars communicating with each other and roadside infrastructure to detect an accident around the next corner.

Second, some real-time data needs to be stored over time so it can be cross-referenced with other data variables or compared over time. For example, medical data like MRI scans will need to be compared over time for a single patient or different patients at a global level using self-learning AI systems.

Finally, this data needs to be accurately analysed and protected, ensuring adherence to strict compliance, governance, privacy and data sovereignty requirements.

The Internet of Enterprises isn't just about connecting people. It's also about connecting people to objects and, in turn, objects to business processes – even those extending outside the perimeter of the enterprise – and also technology infrastructure.

New technology enablers

A number of emerging technologies are enabling the Internet of Enterprises era at each step of the data journey:

- **5G and edge computing** enables the real-time enterprise, connecting IoT devices at scale. Edge computing will grow in importance as an intermediary data processing point between the cloud and the IoT devices or endpoints to help

facilitate real-time, on-the-go decisions.



Edge computing bringing IT closer to 'home'

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- **SD-LAN (software-defined LAN)** will be essential to manage network segmentation, based on people and machine identity instead of traditional switch and router configurations. It enables businesses to easily integrate a new group of machines into a network, provide temporary or permanent access to a partner, and protect their network by logically isolating suspicious devices. It also allows businesses to enable IoT at scale.
 - **SDx (software-defined everything)** enables the implementation of business rules across your IT systems to prioritise certain types of traffic or apply additional levels of security protection. It is enabling virtualisation of the WAN with SD-WAN, but also the LAN, Wi-Fi and even 5G itself. SDx is all about being able to plan effectively and also react to issues that inevitably arise in the real world – rerouting traffic if there is congestion, for example.
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SD-WAN enables better cloud performance

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- **AIOps (AI for IT operations)** is the application of AI to the data logs streaming out of diverse IT systems to predict congestion and other IT problems. It enables us to take corrective action and deliver positive end-user experiences.
- **Data lakes and multi-cloud services** have become critical to access unstructured and structured data in multiple locations – without having to preprocess it extensively. The key is to have a "cloud right" approach.
- **AI and data analytics** are enabling the creation of the cognitive enterprise. Data scientists and analysts are able to apply data to address key business problems and use AI to look for answers in data at scale.
- **Chatbots:** AI and automation is also vital for better customer service delivery by freeing up staff to deal with more complex problems. Chatbots can use natural language processing to answer routine questions from customers and employees in retail banking or for internal IT service help desks.
- **The connected workplace** complements chatbots by embedding communications into business processes using a communications platform as a service.
- **Value chain cyberdefense:** protecting operational technologies like connected IoT devices, as well as monitoring the security logs streaming out of them, and traditional IT systems is a vitally important area. Today, hackers can use Internet-enabled operational technologies, being serviced by third parties, as a back door into an organisation's network. And, we have a responsibility to ensure our suppliers and partners are able to keep our customers' data safe and secure.

The future is data

Data is at the epicenter of providing more integrated and intuitive products and services to customers. The use of data in the enterprise is going through a strong development cycle. Many businesses have yet to realise its full value. A robust data management and capitalisation strategy is paramount for any company looking to maximise opportunities in the highly connected world of the Internet of Enterprises.

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