DELLTechnologies

CREATING VALUE WITH EMERGING TECHNOLOGIES

Starting at the Edge

PART 2 IN A 3-PART SERIES

intel

What is happening at the Edge is striking at the very core of every business – a transformation of how people and machines interact with digital services. By enabling new types of interactions with these services, this technology can create new opportunities, which drives new value and competitive advantages.

Much like the term cloud in its early days, "Edge" is not clearly defined. Some define it by the types of machines found in so-called Edge environments - compute or device. Others look at the architecture in play - cloud and Edge. Still others think it is a technology stack - thin (gateway + software) or thick Edge (server + software). The fact is, there is no single type of Edge technology; depending on the use case, the technologies and standards are different.

While all of these definitions are factually correct, there is a bigger picture: Instead of defining the Edge by what it is, we believe it is best to define Edge by what it does. By enabling new types of interactions with digital services, the Edge can use data to create new opportunities for people and machines.

The Edge is growing. Within the next 3-4 years, mobile data traffic is expected to surge by 800%. Of that data, 45% will be stored, analyzed and acted on at the Edge.[1]

The Edge is one of the first important steps you can take toward leveraging emerging technologies. But why is the Edge so important? It's all about data. To oversimplify, the Edge empowers data, which improves digital services and that, in turn, delivers an Edge to organizations using it correctly.

This brochure explains the Edge's critical role and how it can create a competitive advantage for organizations.

Edge Computing:
The Essential Piece of the Puzzle

Emerging technology must be at the heart of every digital business, and the Edge computing is a starting point. Previously, Edge computing was mostly used to ingest, store, filter, and send data to cloud systems. However, as technology continues to evolve, Edge computing systems can now handle more compute, storage, and analytic power to consume and act on the data at the machine location. This increase in capability means that Edge computing will enable organizations to differentiate themselves by improving their speed to market on leading trends.

The Edge will transform how people and machines interact with digital services. IoT connects billions of small things to provide one big thing: business value. With an ever-growing amount of data, the Edge is the missing puzzle piece to bring value to data. Edge computing augments IoT by enhancing our ability to analyze IoT data and act on it in real time. It will help machines share data and optimize themselves with new services based on what's working best.

In today's deluge of data, the future belongs to organizations that can transform IoT-gathered data into insight-rich information, fueling faster, more accurate and more cost-effective decision-making than the competition. What do organization leaders need to know about the Edge?
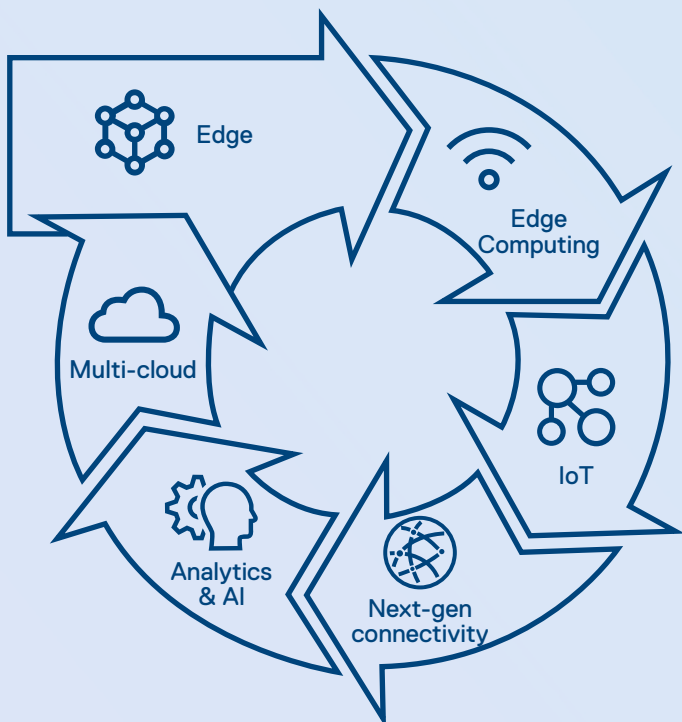
Background and Trends

As with every tech trend, the Edge is awash in hype, but experts predict the Edge will be critical to virtually every organization. **According to Gartner, "Around 10 percent of enterprise-generated data is created and processed outside a traditional centralized data center or cloud. By 2022, this figure will reach 75 percent."**[2] And, according to Forrester, the top factors driving Edge adoption are:

Bandwidth and connectivity limit performance. There isn't enough bandwidth to send data to and from private and public clouds, let alone billions of connected devices.

Data transit is expensive. The amount of data that connected products generate can be huge requiring large amounts of bandwidth to transport.

Latency can limit application performance. The amount of time that passes between Edge and cloud-based compute systems is acceptable for many applications but intolerable for others, even when speaking to a data center in the same metropolitan area.

Key Benefits

1 The main benefit of Edge is creating new value from data by acting on data faster and more efficiently. The end result is higher speeds for end users, with latency measured in microseconds rather than milliseconds.

2 With Gartner expecting more than 20 billion connected devices to be in place by 2020,[3] companies across industries must continually rethink how they collect, augment, and use their vast data stores. The rise of Edge computing, coupled with a single view of the customer, will empower organizations to deliver the next generation of the digital experience and positively impact brands' bottom line.

3 With the data processing occurring closer to the source, anyone who needs to act fast on data can make better decisions.

How Digital Leaders are Using Edge to Deliver New Value

Emerson

Manufacturing company Emerson needed to quickly develop and deploy a scalable industrial automation solution to collect IoT data and help customers better manage and troubleshoot control valves. They worked with Dell OEM to develop a new wireless valve monitoring solution. The outcomes were transformative:

- They could quickly develop solutions on a global scale
- Customers were provided with a better way to manage and troubleshoot control valves
- Improved time-to-market for new IoT solution development
- More time could be spent on innovating, less time on managing infrastructure

Olivetti

Olivetti, a technology company, wanted to transform production for small and medium-sized businesses (SMBs) and looked to work with Dell Technologies to deliver its turnkey solution. They were able to make production line or factory-floor machines "smart and connected," taking data from the production line or machines and make it immediately available through multiple interfaces. The outcomes created new value:

- Greater productivity and efficiency with real-time data
- Delivering maximum uptime with the help of services support
- Avoiding delays with order fulfilment completed in weeks not months
- Supporting business expansion through modular architecture
- Creating a truly plug and play, fully-integrated and managed solution, installed and operational in few minutes
- Helps SMBs digitally transform their production lines

Conserveit

Industrial and building automation company Conserve IT required an original equipment manufacturer (OEM) partner to overcome existing challenges, including inconsistent hardware performance, time-consuming relationship management and a lack of certification in new markets. With the help of Dell Technologies, they developed PlantPRO to help building managers optimize chiller plant systems—systems that circulate chilled water through HVAC equipment and buildings to reduce temperatures. By integrating PlantPRO with a plant system, managers can fine-tune temperature control by taking advantage of the IoT technologies to continuously run analytics and diagnostics right at the Edge. The outcomes were as follows:

- Drives sales in key market for universities
- Gives customers peace of mind with renowned brand
- Helps cut inventory by 20%
- Eliminates time-consuming and costly administration
- Opens new markets with global hardware certification

> *"Currently, Edge computing promises to play an essential role in the network of the future as it evolves to accommodate IoT needs. In future, Edge computing will be used in smart cars and along with many other devices."*
>
> -PAX BHATI, DIRECTOR, EY (FORMERLY ERNST & YOUNG)[5]

The Dell Technologies Approach to Edge

In today's world, digital services originate from both clouds and data centers. According to Forrester, 29% of surveyed firms have already implemented or are expanding implementation of Edge for analytics. Momentum for Edge IoT for analytics solutions will accelerate, as 22% of firms plan to implement these solutions in the next 12 months, and another 38% of firms express interest.[4]

Given this environment, it's more important than ever to provide people with the technology you need to transform how you—and the machines you work with—interact with services. We believe our approach to the Edge meets this need and drives transformative outcomes in four key ways:

1 Think data first.
By untethering Edge from cloud, you can optimize each for your use case and stay in control of your data. This allows you to identify and prioritize your data sources for maximum value and enable compute anywhere.

2 Simplify, simplify, simplify.
Abstract away complexity by enabling software-defined infrastructure everywhere possible, ensuring interoperability and management at scale.

3 Liberate applications.
Enable agile development and deployment of applications on your terms, and ensure they run on any Edge and any cloud.

4 Build for outcomes.
Ensure you build for beneficial outcomes by employing technology and services for specific use-cases and consist of easily customizable and configurable solutions, all delivered reliably and consistently. Choose a strategic partner with a consistent and reliable supply chain, so you can count on upgrades, support and service for years to come.

Gaining a Competitive "Edge" by Partnering

As more functions happen at the Edge, IT must change compute, network, storage and apps architectures. Dell Technologies helps customers architect for better outcomes, on their terms, while minimizing risk of their IoT journey. Working with Dell Technologies and our curated partners, you'll be able to deploy solutions that create value quickly and give you the confidence to move forward decisively. With our industry-leading expertise and services, broad portfolio and open architecture, we bring more intelligence to every initiative, from the Edge to the cloud.

Read parts 1 & 3 of this report:

Part 1
Creating Value with Emerging Technologies:
The Differentiator for Digital Innovators

Part 3
Creating Value in a Digital World:
The Role of Emerging Technology

READ
the results of the Dell
Technologies Digital
Transformation Index study

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for more information

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Sources: 1. Is the world ready for a 5G data tsunami? SiliconRepublic, Nov 2017 https://www.siliconrepublic.com/comms/5g-data-impact ***IDC FutureScape: Worldwide Internet of Things 2017 Predictions 2. Gartner, "Smarter with Gartner," https://www.gartner.com/smarterwithgartner/what-edge-computing-means-for-infrastructure-and-operations-leaders/. 3. Gartner https://www.gartner.com/imagesrv/books/iot/iotEbook_digital.pdf. 4. https://www.dellemc.com/en-us/collaterals/unauth/white-papers/products/gateways-embedded-computing/forrester-iot-driving-analytics-to-edge.pdf. 5. http://flarrio.com/edge-computing-micro-datacenters