

Internet of Things Integration

- The Internet of Things (IoT)
 - Gartner predicts 5.8 billion IoT endpoints in operation by 2020
 - By 2025, that will rise to 21 billion IoT devices (Norton, 2018), 41.6 billion (IDC, 2018)
 - IoT spending is expected to register 15.4% y-o-y growth to reach \$1.1 trillion by 2025 (EY, 2019)
 - IoT devices worldwide will generate 90 zettabytes of data by 2025 (EY, 2019)
 - Data generated by IoT devices is expected to hit 79.4 zettabytes (IDC, 2018)

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- "As the market continues to mature, IoT increasingly becomes the fabric enabling the exchange of information from 'things', people, and processes.

“Data becomes the common denominator – as it is captured, processed, and used from the nearest and farthest edges of the network to create value for industries, governments, and individuals' lives,” Carrie MacGillivray, GVP, IoT, 5G and Mobility, IDC

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- IoT impacting enterprise infrastructure and architectures:
 - Fog and Edge - IDC predicts that by 2025, nearly 45% of the world's data will move closer to the network edge
 - Fog/Edge Computing architecture is a key to enable this large amount of data to be processed, stored and transported and also enables emerging technologies such as IoT, 5G, AI
 - The overall market opportunity for Fog/Edge Computing is pegged to rise to \$18.2 bn by 2022 (\$1.03 bn 2018, \$3.7 bn in 2019)



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- According to EY: 5G may unlock immense IoT potential
 - 5G is likely to reshape current wireless communication methods used for IoT-based applications
 - “IoT cannot thrive without effective and affordable wireless connectivity, interoperability and common standards. We believe 5G has the potential to make a ground-breaking impact on the way in which future IoT ecosystems are designed, especially in the areas of scalability, latency, reliability, security and the level of individual control on connectivity parameters,” Aleksander Poniewierski, Global IoT Leader, EY

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- Analyst AnalyticsInsight.net argues that integration of blockchain technologies into IoT frameworks is fundamental to supporting security and transactionality
- 20% of IoT devices are already utilising some sort of blockchain-based solution
- Spending in the industrial (IIoT) and IoT blockchain sphere is expected to grow from \$174 mn to \$573 mn by 2023

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- Implications:
 - Market opportunity will see vendors and service providers focus on IoT development and adoption
 - There are significant implications for organisations' IT estate:
 - Edge computing
 - Blockchain
 - 5G
 - Security (DDoS, data protection)
 - Key areas for adoption will be:
 - Transport and logistics
 - Oil and gas
 - Smart cities
 - Agriculture

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