



# Financial Services Data and Analytics Newsletter

June 2022



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# Introduction

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We are undergoing an interesting transition pivoted by technological advancements that are unheard of or unimagined. 'Edge computing' is one such breakthrough. It is an amalgamation with 5G, Industry 4.0, internet of things (IoT) and artificial intelligence (AI)/machine learning (ML), and will be instrumental in pioneering the way data will be stored, computed and acted upon. Edge computing will thrive on lightweight and agile processing platform designs that can be successfully deployed even with physical space, environmental, power and connectivity constraints. However, some challenges to be solved to gain full potential of edge computing would be to come up with interoperability within a multi-vendor hardware/software environment, centralised way to deploy and manage the edge nodes and its security, challenges in data consistency and transient responses between edge nodes and central cloud servers. I wish to witness the prediction of 75% of data processing via edge computing by 2025. Till then, happy reading!

This newsletter also features relevant news from the industry sectors and alliances around applications of metaverse, digital applications and Government reforms powered by data and analytics.



# Topic of the month – Edge computing

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## What is edge computing?

Edge computing in general refers to the deployment of computing infrastructure in a distributed fashion to enable processing of data as close as possible to its source of origin. Since the data gets processed near its source, it leads to low data latency and bandwidth costs. The origin where the data gets generated is called an EDGE device and the infrastructure where the data gets processed is called EDGE server. The EDGE device can be mobile devices in a particular region, a retail store, an autonomous car or IOT sensors across a smart city. The EDGE servers which provide small-scale computational capability only process the data and send only results of that processing such as real-time business insights or actionable data points to the main centralized data center for storage and further actions.

Presently multi gigabytes (GBs) of raw data gathered are collected and sent via the internet to centralised servers/cloud located thousands of miles away, presenting challenges related to availability of internet bandwidth, the storage and compute capacity required for this huge amount of data, the costs associated with data transfer and network reliability.

By storing and computing near the periphery and only sharing the generated insights and analytically critical data, a near real-time system can be achieved with strengthened cyber security while transmitting because of additional security and encryption possible at the edge units.

A very common usage of edge computing is video-streaming or video-on-demand using edge locations where content is already cached in low latency content delivery networks (CDN). The data from a centralised cloud server is cached to these edge locations and served to end-users from edge locations directly. Most of the public cloud service providers already provide CDN at edge locations across India apart from centralised data centre in one or two regions.



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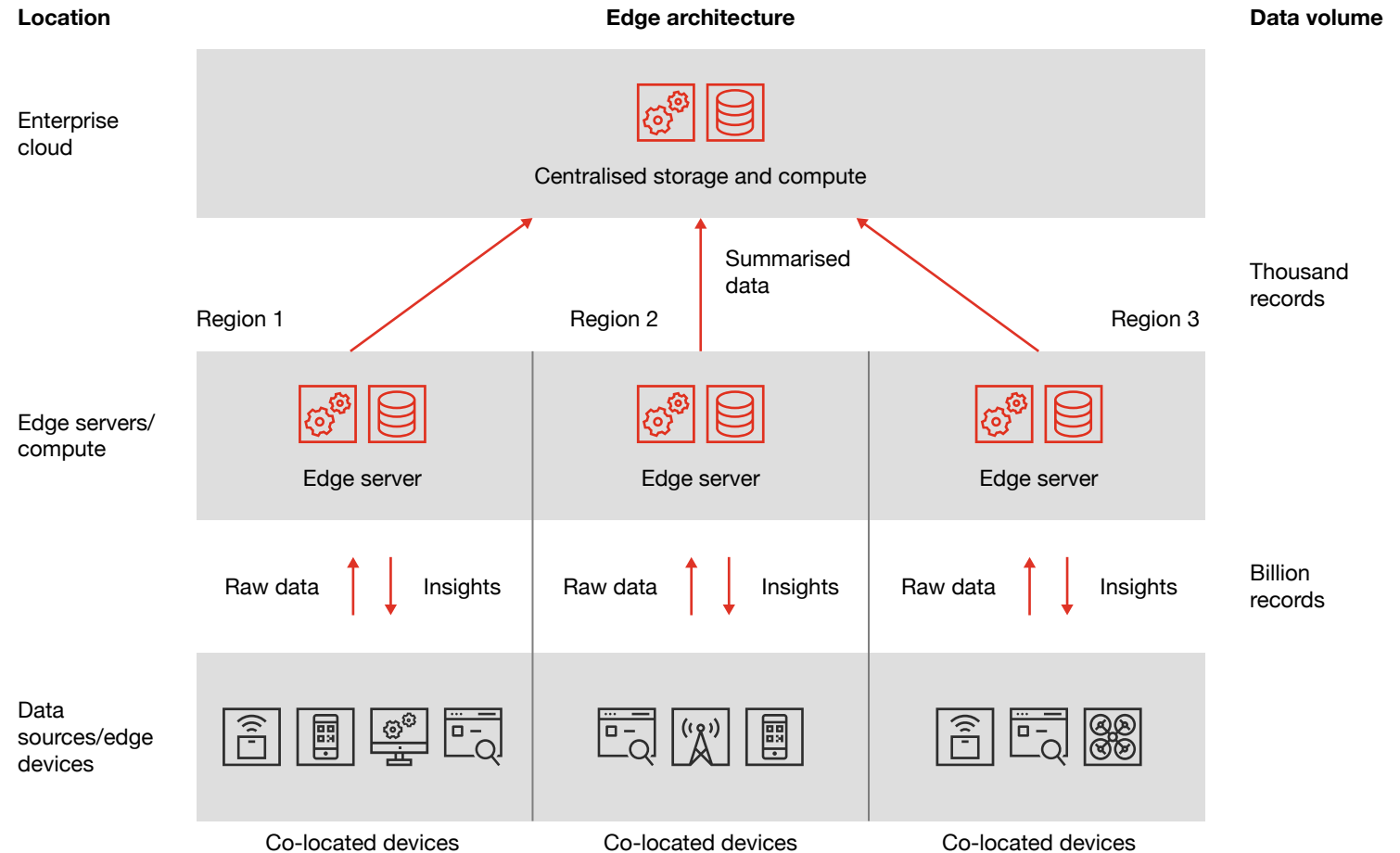
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## High-level architecture for edge computing



Source: PwC analysis

**Edge devices:** Edge devices like IoT sensors, drones, apps on phone/tablet/website generate huge data (billions of records) and the same is sent to a nearby edge server.

**Edge server:** The edge server receives the raw data from nearby devices to process and then sends insights to the end devices. The only summary/insights are sent to central repository located in enterprise cloud.

**Enterprise cloud:** A centralised location for storage and processing for the enterprise.

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## Advantages and limitations of edge computing

### Advantages



- 1 Near real-time data and AI computation and response
- 2 Bypass network and bandwidth limitations by sending only analysed and actionable data for intake
- 3 Edge caching brings data latency in order of milliseconds
- 4 Offers a far less expensive route to scalability and versatility
- 5 Ease of compliance with data governance laws of the states
- 6 Significant reduction in data transmission costs

### Limitations



- Set up requires advanced infrastructure and high expenditure
- Major need of IT professionals or upskilling of current employees
- Provides one more surface for cyberattacks
- High security and maintenance challenge for management and protection of edge data centres

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## Use cases

### Customised results for customers through video recognition

Traditionally used customer engagement channels are monotonous and back end programmed to show fixed recommendations and advertisements. Banking, financial services and insurance (BFSI) institutions can leverage edge computing here for flexible and fast updates in advertisement material while taking advantage of real-time processing for displaying more customer-relevant details. For example, in case of branch banking, a customer can be identified using video analytics as soon as they walk in, and all the relevant details related to them can be passed on to the branch employees. As the customer enters their personal details on a self-service portal, real-time products/offers can be customised and the details of the product can be shared with employees for them to have relevant conversations with the customer. In another scenario, video analytics can be used to look at how customers use the physical space of the branch and which areas are more frequently used, and redesign the office space accordingly to provide optimal comfort to customers.

### Fraud detection in financial services

Because edge computing takes place closer to the source device, it can be leveraged to detect and prevent fraud in real time. Real-time analytics can enable institutions to identify and prevent fraud as they happen rather than after the incident so that the issues are addressed proactively and the financial impact, if any, is minimal.

For example, in case of automated teller machines (ATMs), cameras installed can capture the face of the customer using the ATM. Facial recognition technology can then be used to identify if the customer using the ATM is the same as the one owing the ATM card, and the police can be alerted if any criminal activity is suspected.

### Lean and portable branches

BFSI institutions can rethink retail branch formats and develop lean, portable, shared and white-label branches. These branches could be remotely served by tellers and use computer vision and edge analytics to provide related services. Thus, with edge computing, BFSI institutions could make it possible to offer customised financial products and services to customers located anywhere, including in hinterland and rural areas, to drive financial inclusion.

### Business continuity

At times, BFSI institutions face cyber attacks or technical glitches either due to software or hardware failure (in the case of on-site servers), leading to downtime in services and increased customer dissatisfaction. With edge computing, the data gets stored, cached and processed near the source with minimum response time. In case of service failure, the services will be hampered for minimal downtime by switching to a different edge server, keeping most of the customer functionalities intact, thus ensuring a smooth and continuous business experience.

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## Conclusion

The emerging 5G technology, supposed to be ten times faster than 4G and combined with advanced edge computing architecture will be a game changer in the field of cyber security, customer experience, business continuity, and real-time analytics while paving the way forward for many more innovations aimed at reinventing customer experiences. But are all use cases/applications fit for edge computing?

The following need to be considered before deciding whether the application is fit for edge computing or not:

- 1. Data latency:** Is the application desired to have near real-time response? If yes, then it will require edge computing resources to meet the data latency requirements.
- 2. Data storage:** Does the application generate data which is required to be stored centrally in its raw form? Is there a regulatory or jurisdictional compliance to store all the data? Can we store only the summarised data centrally? If yes, then limited and summarised data from edge locations can be transferred to the cloud.
- 3. Data transfer costs:** The cost of transfer of data between centralised servers and edge devices can be very high depending on the volume of data being generated. If not all data is required for storage or processing, then only the required data can be sent to the centralised server to reduce data transfer costs.



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## 1. 'Kiyaverse' – India's first banking metaverse

Kiyaverse will enable banks to create their own personalised metaverse backed with gamification and real-world use cases like virtual relationship managers, peer avatars and robo advisors. Next phases will involve open API connectors with aggregators, banks as custodians of customers' assets like non-fungible tokens (NFTs), and integration with central bank digital currencies (CBDCs) for transaction.

## 2. NITI Aayog launches the National Data and Analytics Platform (NDAP)

NDAP seeks to democratise Government data by making datasets accessible, standardised formats, interoperable, and documentation on dataset. As of May 22, the NDAP hosts datasets from across 14 sectors and 46 ministries. The NDAP will follow a use-case based approach to ensure that the datasets are curated to the needs of data users in different sectors, making it easy to merge datasets and do cross-sectoral analysis.

## 3. An insurance company to build a digital commercial platform

To build the digital commercial platform, AXA has decided to initially launch two platforms, one for risk insights, risk management capabilities and new services to support commercial clients called AXA smart services and the other one will be an ecosystem to provide a spectrum of sustainability services called AXA climate. To perform real-time data and analytics, AXA will be using satellites, drones, sensors with its risk prevention services and expertise in underwriting and claims capabilities.

## 4. Need for data and analytics to curb insurance industry loses of 8.5% of total revenues to fraud

According to the Indian forensic centre, the country loses around INR 6.25 billion to frauds annually. This is almost 8.5% of the total revenue generated by the industry. Traditional methods of fraud detection are no longer efficient as fraudsters are also using technology to evade exposure. With concepts like social network analysis, predictive modeling and social CRM, insurance companies could tackle frauds and increase profit margins.



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## 5. Increased policy rates impacts NBFCs financing cost

Crisil, in one its report, has envisaged borrowing cost of 7.2– 7.4% for FY23. These higher borrowing costs would be partially recovered by charging higher rates for the products where rates charged are nofloating in nature.

## 6. BNY Mellon's Pershing launches next-gen asset management platform - NetX360+

NetX360+ Pershing's platform gives advisor and wealth management a more streamlined user interface and intuitive experience and it's available now with features like hyper personalisation based on a user's unique profile and usage habits. It will also utilise search results based on machine learning for faster access to relevant data. New data insights based on customer behaviour and market activity that identify the next best actions to address client demands and business growth prospects proactively. Integrated learning using a digital adoption platform to help users master new features and tools more quickly.



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## 1. What Salesforce is doing to help asset managers deliver individualised services at scale

Wealth managers may use digital solutions to provide omnichannel access to solutions, deliver customised advice at scale, improve the ecosystem experience, and produce deep value for all stakeholders through agility, relevance, and timely delivery of solutions. Salesforce assists wealth management firms throughout the investor lifecycle by providing advisers with a single source of truth about their clients and leveraging AI and machine learning to make every interaction smarter.

## 2. Max Life Insurance joins the bandwagon of digitisation by using AWS to double its cloud footprint

To ensure a frictionless customer experience, Max Life Insurance (MLI) has joined the bandwagon by using AWS to double its cloud footprint. By using the storage, compute and data and analytics features of AWS, MLI hops on to the cloud for growth. MLI has also automated the issuance process, enabling customers to buy insurance in as little as 30 minutes.



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## 1. Winners of the seventh annual Innovation in Insurance Awards were declared by EFMA

The European Financial Management Association (EFMA), established by banks and insurance companies, is an organisation to facilitate networking between decision makers in the financial services industry. Innovation in insurance awards is a global programme to recognise best new innovative ideas and projects in insurance. This year, the programme had attracted 398 entries from 251 institutions in 44 countries. All the innovative ideas focused on customer satisfaction and applications involving AI, automation and sustainability.

## 2. AI in wealth management and its potential to disrupt the industry

Financial advice, tax planning, estate planning and even legal assistance fall under the umbrella of wealth management. It considers a variety of factors that influence your overall financial situation before making recommendations on how to increase your wealth. Financial consulting has always been an expensive endeavor. The cost of AI has decreased significantly and it has been discovered that AI-based systems are better at decision making.

## 3. RBI to explore alternative sources of data along with big data/ML for policy making

RBI Governor, Shaktikanta Das, highlighted the need to go beyond the standard macroeconomic statistics for assessing macroeconomic conditions. Newer data sources that have higher frequency indicators than the traditional macro statistics are explored to assess movements in critical variables, such as consumption and production. There is a need to use alternative statistics efficiently and effectively to complement the regular aggregates. RBI is also making headway in big data analytics by implementing nowcasting, text mining and ML algorithms.



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