Data monetization opportunities with IoT, 5G and AI

How Telcos can rise to the occasion

IoT, 5G and AI are ushering in a new era of customer and citizen engagement. This is a monumental data revolution that is driven by the smartest of solutions to make consumer lives better, improve people-to-people connect and enable enterprises to grow.

According to Gartner, 66% of organizations plan to deploy 5G by 2020[1]. Meanwhile, 59% say they will include IoT communications in the use case for 5G[1]. IHS Markit estimates that the number of IoT devices will rise from 27 billion in 2017 to 73 billion in 2025[1]. All of this will result in a massive increase in data volume.

IoT is pervasive and controllable, which has added a new dimension to information collection. The application of IoT data is virtually limitless. Combined with AI, IoT data will help uncover new avenues for revenue and increase the net value for Telcos, banks, and other enterprises. IoT with AI will also help government agencies to engage better with citizens.

Globally, IoT monetization is expected to reach USD $542.92 billion by 2023, at a CAGR of 52.95%[2] 5G is up to 100 times faster than 4G speed[3] and this enables improved IoT connectivity and usage. The introduction of 5G will cause the Telco data volume to increase manifold. This presents a tremendous opportunity to derive insights out of data for enterprise collaboration and monetization.

Telcos: At the helm of the connected insights space

5G investments by Telecommunications carriers will power the IoT revolution. With the predictive capabilities of AI, Telcos will now be able to connect, monitor and monetize in real time - personal devices, autonomous cars, static

In the 5G era, current data analytics and AI capabilities of Telcos will be put to severe strain due to the extremely high volume of data involved, and the need for real time insights and capability to generate deep insights from the data

sensors, cameras, kiosks and more - to give a unified positive customer experience to subscribers. Telcos can now be the focal points of campaigns, not just to offer better Telco services but also to become the hub to offer products and services across industries. Some use case options include:

1. Personalized insurance offers based on the health parameters of the subscriber or driving pattern of the user using Telematics. The subscriber will also benefit from this since the personalized offer will consider the actual risk quotient of the user as opposed to the traditional categories like age, income etc.

2. Smart Home data to monetize this with enterprises.

   a. Smart Refrigerator that monitors the replenishment levels of produce at each home, then orders replenishments through the food delivery service, or aggregated data shared with enterprises who value such data for better planning.

   b. Data from Smart Thermostats, Smart Bulbs can be invaluable in understanding the energy consumption patterns of consumers and aid in better planning of usage.

3. Connected Enterprise, where 5G in tandem with IoT helps in information integration of

manufacturing, logistics and the marketplace. These technologies help make enterprises efficient and nimble through all stages of planning to the sales process and supply chain optimization.

4. 5G will improve location accuracy, which will be delivered with milliseconds low latency. This, in tandem with AI, will enable a better understanding of customer behavior, hobbies, occupations etc.

Conventional Telco customer experience drivers - network experience, device experience, product experience and location, will be augmented by a digital touchpoint experience including App experience, and IoT-enabled multi-touchpoint experience. This means that not only will the customer engage the Telco on the Telco products, but Telco will be central to the subscriber's lifestyle including smart personal devices.

Monetization of smart data will benefit subscribers, (by getting better home or health insurance, vouchers from Telcos), Industry (banks, insurance, retail) and of course the Telco itself.

Hurdles in the data monetization journey

Consent Management - The critical challenge for Telcos is consent by subscribers to access their user data, especially with GDPR and similar

country-specific privacy laws in force. While the Telcos have access to network, interactions, device and location data, the personal data of subscriber related to apps usage or smart home systems is sensitive and needs subscriber consent. Telcos can overcome this by incentivizing subscribers or gamifying the usage. Care is also to be taken to ensure that data is securely handled, anonymized and encrypted.

Real Time AI at Scale – The ability to assimilate, understand, analyze and act in near real time will determine the success of Connected AI. Data volume and latency requirements will need to be considered while designing the digital and AI solutions. Large volumes of Mbps time series data throughput is expected from the IoT devices. This will make high performance streaming, processing data platform with ability to handle petabytes of data, a necessity. Event data streams flowing from IoT devices can be used for AI-driven decisions and near real time actions, while Big Data over a period of time can enable deep learning and discovery. Recommendations can be used by the enterprise or by subscribers leveraging digital platforms.

Data Governance – The capabilities to onboard diverse data sources with defined policies and procedures, secure the data to prevent mala-fide usage, ensure that the right quality of data is flowing into the AI platform and trace the insights to the data source – all of these are critical success factors of AI-driven monetization of 5G data.

Data Security – Safeguarding consumer data will be critical. The capability to secure this data including techniques like role-based masking and anonymization, encryption for data in motion, network perimeter security etc. are required to ensure that the personal data or enterprise data is safe.

Winning with a solution built on IoT data pipeline and AI-driven decision engine

Telcos can leverage Wipro's Data Discovery Platform (DDP) to unlock greater potential across the IoT value chain. DDP's High Performance Event Processing and Deep Learning platforms come with pre-built Data Science applications. The Data Science Framework in DDP allows Data Scientists to leverage rich IoT data to generate potential revenue generating insights (See Figure 1 & 2).
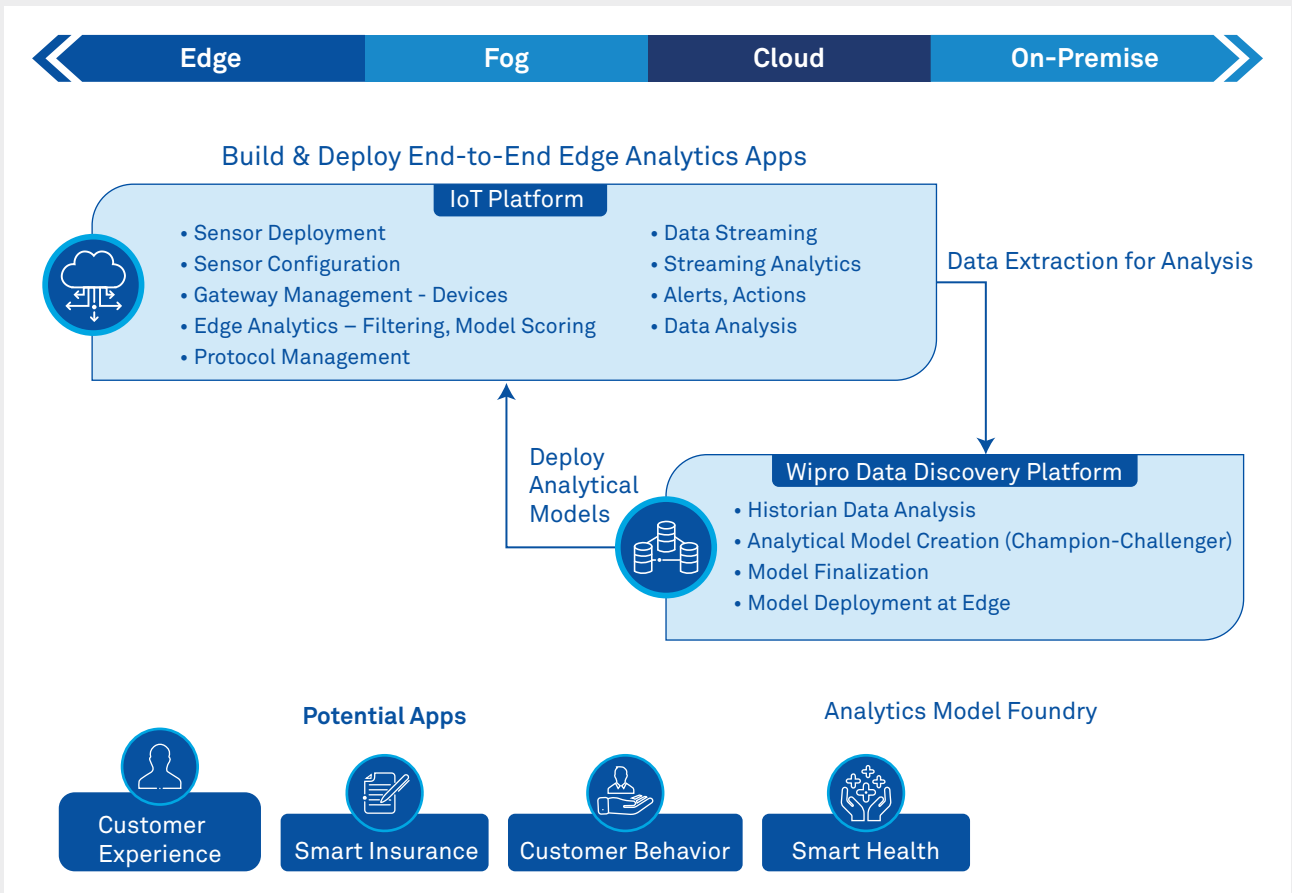
Edge — **Fog** — **Cloud** — **On-Premise**

Build & Deploy End-to-End Edge Analytics Apps

IoT Platform

- Sensor Deployment
- Sensor Configuration
- Gateway Management - Devices
- Edge Analytics – Filtering, Model Scoring
- Protocol Management

- Data Streaming
- Streaming Analytics
- Alerts, Actions
- Data Analysis

Data Extraction for Analysis

Deploy Analytical Models

Wipro Data Discovery Platform

- Historian Data Analysis
- Analytical Model Creation (Champion-Challenger)
- Model Finalization
- Model Deployment at Edge

Potential Apps

Customer Experience

Smart Insurance

Customer Behavior

Analytics Model Foundry

Smart Health

Figure 1 - Data Discovery Platform – Building analytics apps

Data Acquisition — **Insights Generation** — **Consumption**

Data Sources | Data Collection & Processing | Event Processing & Analytics Layer | Action / Decision Layer

Edge
- Sensors
- Applications
- Custom Agents

Cloud / Field Gateways

Fog Database

Device Management
- Protocol Management
- Device Registration
- Device Control

Media
- Social
- Clickstream
- Market Data

Fog Processing
- Filtering
- Buffering
- Normalization
- Event Detection

Network
- eMBB
- mMTC
- URLLC

Processing
- Event Listening
- Event Detection
- Event Correlation
- Static Values Lookup
- Event Processing – Filter, Cleanse, Ordering, Aggregate, Windowing

Analytics
- Real-Time Model Scoring
- Event Analytics – Live DataMart

Store
- Results Store
- Event Detection

Data Lake
- Deep Data Science
- Time-Series / History Analysis
- Distributed Data Store

REST API

- Marketing
- Alerts
- Dashboards
- Action – BPM Workflow
- Mobile Apps

Instrumentation, Data Collection Hub, Data Transport

Stream and Batch Analytics, ML

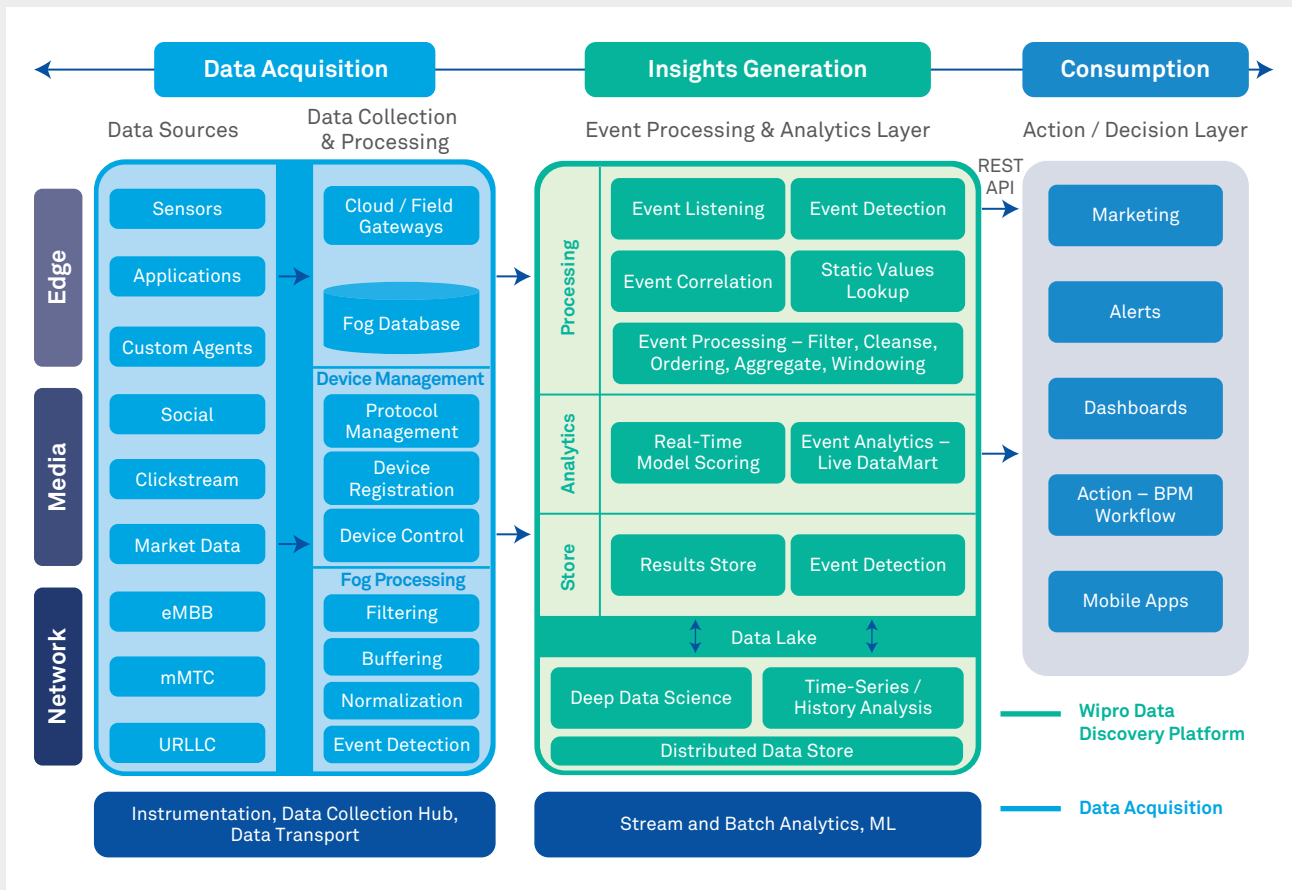**Wipro Data Discovery Platform**

Data Acquisition

Figure 2 - Data Discovery Platform - IoT with 5G analytics reference architecture

Wipro has partnered with leading institutes of excellence in India - Indian Institute of Science, Bengaluru – for Advanced Research and Innovation in autonomous systems and robotics in 5G; and Indian Institute of Technology, Kharagpur – for Advanced Research on 5G and AI. Telcos can leverage their expertise to build innovative capabilities to enable better monetization of 5G data and offer greater customer experiences.

Conclusion

5G networks powered by AI will revolutionize the revenue-making opportunities for Telcos. If operators pursue new business models to improve data monetization and unlock business opportunities, global revenues will grow at a CAGR of 2.5% during the 5G era to $1.3 Trillion in 2025.[4]

Majority of monetization opportunities will be in the B2B space, and Telcos can market and campaign on behalf of other enterprises (B2B2X) using the insights generated from data. Current data analytics and AI capabilities of Telcos will be put to severe strain due to the extremely high volume of data involved, and the need for real time insights and capability to generate deep insights from the data. It is crucial for Telcos to reinvent themselves by building apt capabilities to maximize value from 5G.

References

1. https://bit.ly/36YDz5H

2. https://reut.rs/2u4Vkl0

3. https://bit.ly/3ah1n6D

4. https://bit.ly/2tlVW5X

Mahesh Swaminathan
Regional Practice Director –
Data, Analytics and AI – ASEAN, Wipro

Mahesh is responsible for delivering analytics solutions and consulting to businesses, managing solution sales and partner relationships, and analytics skills development for teams in ASEAN. Wipro has transformed the analytics landscape for large clients in the region, delivering desired business outcomes. Mahesh brings in over 17 years of experience in Sales, Consulting and Program Management.

● **Wipro Limited**
Doddakannelli, Sarjapur Road,
Bangalore-560 035,
India

Tel: +91 (80) 2844 0011
Fax: +91 (80) 2844 0256
wipro.com

Wipro Limited (NYSE: WIT, BSE: 507685, NSE: WIPRO) is a leading global information technology, consulting and business process services company. We harness the power of cognitive computing, hyper-automation, robotics, cloud, analytics and emerging technologies to help our clients adapt to the digital world and make them successful. A company recognized globally for its comprehensive portfolio of services, strong commitment to sustainability and good corporate citizenship, we have over 175,000 dedicated employees serving clients across six continents. Together, we discover ideas and connect the dots to build a better and a bold new future.

For more information, please write to us at **info@wipro.com**