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C21-Virtual Event : The Role of Telco's to Enable Industry 4.0, IoT, 5G and AI driven Hyperconverged Networks for Cross Industry Enablement

The 5G Journey... the 6G Destination 24.v2: Hyperconverged TMT Networks... Space + Terrestrial Multi Play

Manish Pathak
Industry Leader - Network and OSS Transformation
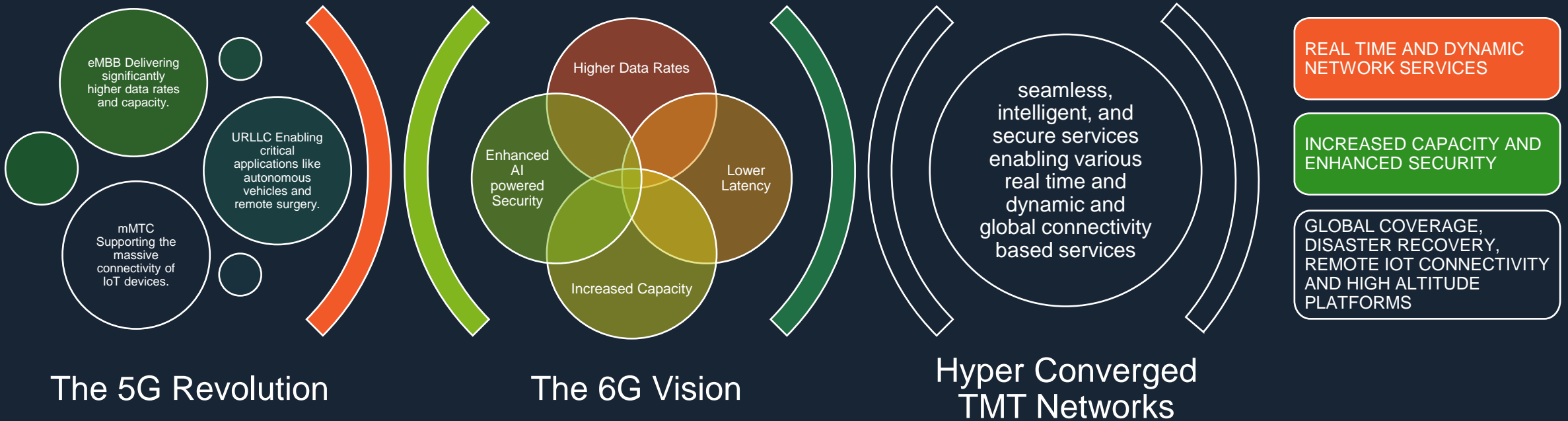
Thursday, November 7th 2024 - 2:00 PM (GMT)

Hyperconverged TMT Networks will unlock unprecedented opportunities

Imagine a future where the boundaries between terrestrial and space networks blur, creating a seamless, hyperconnected world.

This integration of space and terrestrial technologies can revolutionize connectivity, innovation, and digital experiences and creates an enormous ocean of possibilities through hyperconverged TMT networks.

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How we see the Journey and role of Hyperconverged TMT Networks with Business

The convergence of 5G and emerging technologies like AI, IoT, and blockchain is paving the way for a hyperconnected future to enable global connectivity services for Telco's and cross Industry

eMBB Delivering significantly higher data rates and capacity.

URLLC Enabling critical applications like autonomous vehicles and remote surgery.

mMTC Supporting the massive connectivity of IoT devices.

The 5G Revolution

Higher Data Rates

Enhanced AI powered Security

Lower Latency

Increased Capacity

The 6G Vision

seamless, intelligent, and secure services enabling various real time and dynamic and global connectivity based services

Hyper Converged TMT Networks

REAL TIME AND DYNAMIC NETWORK SERVICES

INCREASED CAPACITY AND ENHANCED SECURITY

GLOBAL COVERAGE, DISASTER RECOVERY, REMOTE IOT CONNECTIVITY AND HIGH ALTITUDE PLATFORMS

Where is the Market today and what are the key challenges

Market Trends

Global 5G Network Deployments: Rapidly increasing, with significant investments from telecom operators and governments.

IoT Market Growth: The number of IoT devices is projected to soar, driving demand for connectivity and data processing.

AI and ML Adoption: AI and ML are being integrated into various TMT applications, from network optimization to customer experience.

Satellite Internet Market: Growing rapidly, especially in remote and rural areas.

Key Challenges

Spectrum Scarcity: The demand for spectrum is increasing, necessitating efficient spectrum allocation and utilization.

Interoperability Challenges: Ensuring seamless integration between different network technologies and standards is not easy.

Security Threats Increasing: Protecting networks from cyberattacks and data breaches requires AI enabled security.

Enabling Cross Industry Use Cases: Building packaged offering with faster rollout and rapid adoption cycles

Transforming Legacy : Transforming Legacy IT and Infra, Apps and Services is challenging and time consuming

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Markets are changing and with growing technology, connectivity needs are changing

Telcos must evolve beyond connectivity to become TechCos, adapting to changing customer needs and industry trends while preserving core values.

To enable this change and technology adoption a massive business transformation is required

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How Infosys is helping customer in delivering the hyperconverged offerings

How Infosys is helping the customers in this journey

What Telco Business need to invest-in to deliver the ask and build the foundation to maximise the benefits from Hypercoverged Networks capability

| adaptability to economic or market conditions, | leveraging technology for data management, and | Embrace innovation for business sustainability and growth |

01
"Build a Bionic Core Business" Focus on Value creation to transform existing Core Business

02
Invest to build a Next-Gen Operating Model to handle existing challenges and cater future opportunities

03
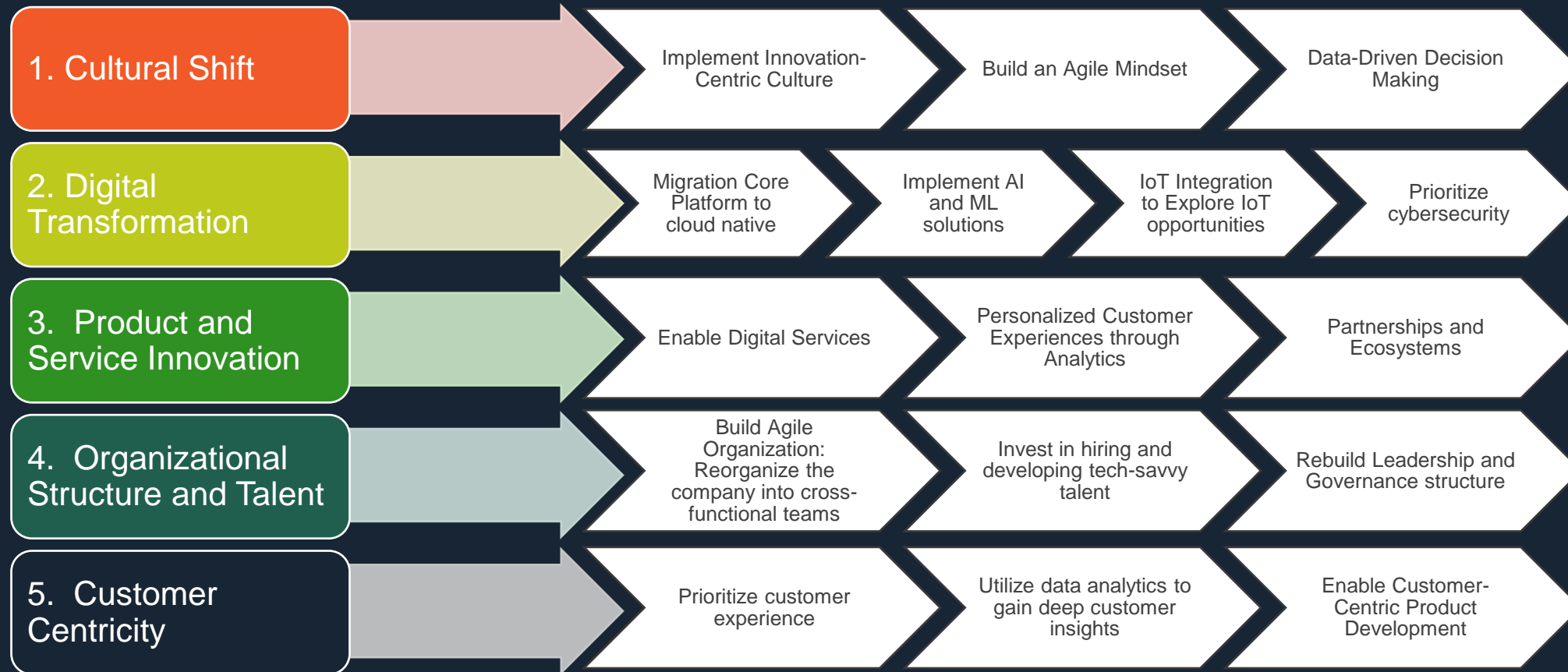Establish AI driven virtualized and cloud native networks to Prepare for upcoming technology disruptions

04
Embrace GenAI for Innovation, increased productivity and deliver enhanced customer experience

05
"Telco to Techco Journey"— Growth Outside the Core Gear up for Intensified Competition from "Hyperscalers."

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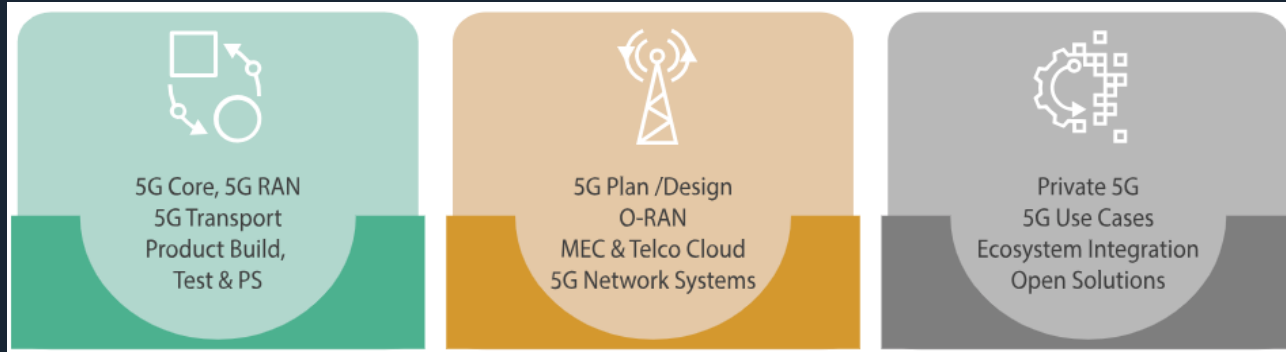
Key Elements in Telco to Techco Transformation

The transformation from a traditional telecommunications company (telco) to a technology company (techco) is a complex journey requiring a strategic approach and significant organizational change.

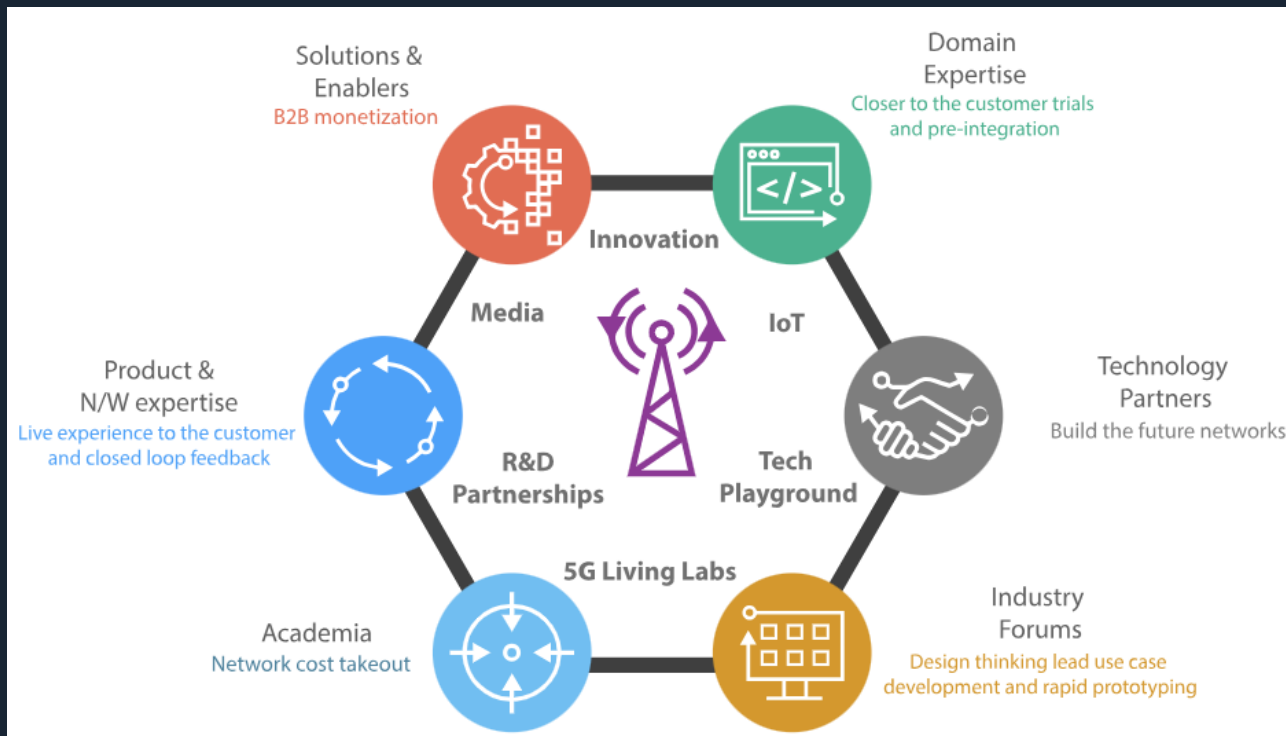| 1. Cultural Shift	Implement Innovation-Centric Culture	Build an Agile Mindset	Data-Driven Decision Making	
2. Digital Transformation	Migration Core Platform to cloud native	Implement AI and ML solutions	IoT Integration to Explore IoT opportunities	Prioritize cybersecurity
3. Product and Service Innovation	Enable Digital Services	Personalized Customer Experiences through Analytics	Partnerships and Ecosystems	
4. Organizational Structure and Talent	Build Agile Organization: Reorganize the company into cross-functional teams	Invest in hiring and developing tech-savvy talent	Rebuild Leadership and Governance structure	
5. Customer Centricity	Prioritize customer experience	Utilize data analytics to gain deep customer insights	Enable Customer-Centric Product Development	

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Infosys 5G and Network Engineering Services

We plan, design and deploy Private 5G networks and Infosys Network Fiber Rollout and Delivery Service to enterprises

5G Core, 5G RAN
5G Transport
Product Build,
Test & PS

5G Plan /Design
O-RAN
MEC & Telco Cloud
5G Network Systems

Private 5G
5G Use Cases
Ecosystem Integration
Open Solutions

Our network engineering capabilities offer cloud solutions that support high bandwidth, low latency and reliable wireless connectivity

Solutions & Enablers
B2B monetization

Domain Expertise
Closer to the customer trials and pre-integration

Innovation

Media

IoT

Product & N/W expertise
Live experience to the customer and closed loop feedback

Technology Partners
Build the future networks

R&D Partnerships

Tech Playground

5G Living Labs

Academia
Network cost takeout

Industry Forums
Design thinking lead use case development and rapid prototyping

SDN and 5G – The Next Wave of Network Innovation

Infosys Network Fiber Rollout & Delivery Services

Next Generation OSS

Infosys Private Network for Enterprises

Infosys Virtual Network Infrastructure

Infosys Smart Network Assurance

Infosys Multi Access Edge Computing

Infosys Network Function Automation

Infosys Slice Manager

Infosys NextGen Network Integration Test Engine

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Next Generation OSS

Helping customers getting their OSS ready through Infosys NGOSS Service Offerings

Infosys OSS digitization process follows the principles of TMF Open Digital Architecture, open APIs and ZOOM (Zero-touch Orchestration, Operations and Management). When complemented by adoption of open source technologies, this framework empowers Telecom Service Providers to transform their legacy OSS to NextGen OSS.

Key features of the Infosys NGOSS framework:

- **Cloud Readiness:** Microservices based, on-demand scalable framework
- **Operations Automation:** Support Digital NOC & empowering operations in decision making through AI/ML driven analytics
- **Self-learning and Auto-healing:** Policy enabled orchestrator for Hybrid Environment
- **Hybrid Network Support:** Support for SDN/NFV, cloud hosted devices, appliances and network functions
- **Agility to meet dynamics of programmable and virtualized networks:** Real-time network topology and discovery
- **Standardized and Normalized:** In alignment to TMForum ZOOM, Open APIs, Technology Neutral Architecture, TMForum Application framework (TAM), Shared Information/Data Model (SID), enhanced Telecom Operation Map (eTOM) etc.
- **Multi-tenancy:** Multi-tenancy capabilities native to the infrastructure
- **Domain Agnostic:** Standardized OSS layer catering to all network domains

Infosys NGOSS Service Offerings

Provisioning and Activation of Networks and Services

- Zero touch order orchestration based on ZOOM principles.
- Automated service creation across multiple layers, domains did technologies
- Provisioning of hybrid networks (traditional and virtualized)
- Auto-remedy for order and network fallouts
- Seamless integration with NB/SB interfaces using TMF open APIs

Network and Services Inventory

- Network and services discovery
- Real-time network and services inventory

Network and Service Assurance

- Fault and performance monitoring of hybrid networks
- Event correlation root cause analysis and service Impact analysis
- Event lifecycle management
- Proactive assurance
- Automated closed control loop management
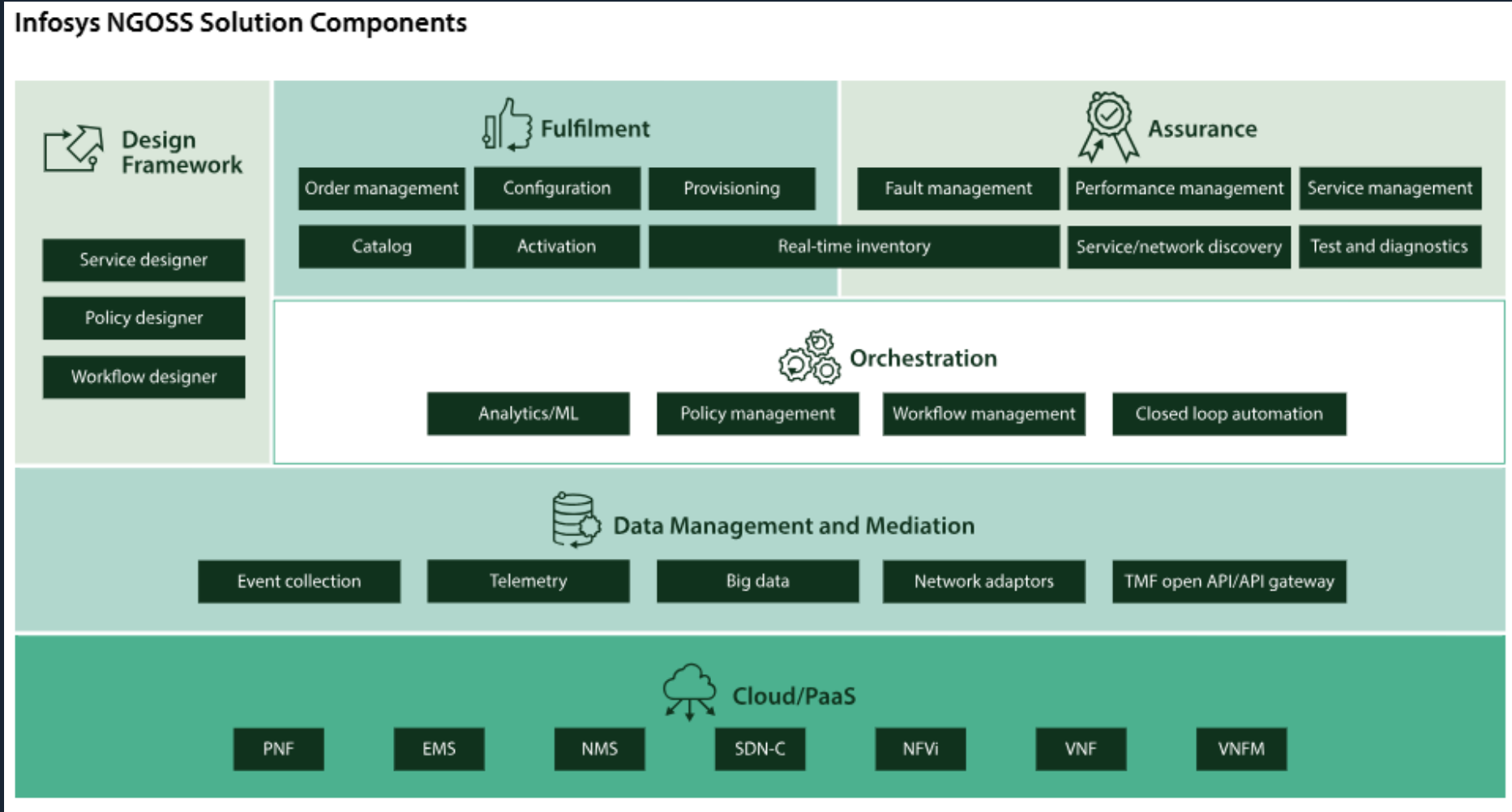- Network configuration management
- Auto-ticketing

Analytics and Automation for Networks and Services

- NOC digitization and operations empowerment through AL/ML -driven analytics and automation
- Order fault prediction using machine learning.
- Fault prevention mechanisms
- Predictive analytics and self-heal mechanisms
- Incident/problem detection, self-heal, and network issue management
- Syslog analysis and network KPI anomaly detection
- Network capacity planning

Next Generation OSS

Helping customers getting their OSS ready through Infosys NGOSS Service Offerings

Infosys NGOSS Solution Components

Design Framework
- Service designer
- Policy designer
- Workflow designer

Fulfilment
- Order management
- Configuration
- Provisioning
- Catalog
- Activation
- Real-time inventory

Assurance
- Fault management
- Performance management
- Service management
- Service/network discovery
- Test and diagnostics

Orchestration
- Analytics/ML
- Policy management
- Workflow management
- Closed loop automation

Data Management and Mediation
- Event collection
- Telemetry
- Big data
- Network adaptors
- TMF open API/API gateway

Cloud/PaaS
- PNF
- EMS
- NMS
- SDN-C
- NFVi
- VNF
- VNFM

Over past two decades, Infosys has successfully delivered OSS transformation solutions for over 40 global Telecom Service Providers. These offerings are well-supported by more than 800 SMEs, market-driven solutions and a unique set of differentiators that help clients gain maximum value.

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ENTERPRISES NEED TO BE AI-FIRST TO STAY RELEVANT AND THRIVE

The AI Revolution is here and will transform the enterprise.

We are experiencing the **AI transformation era** and its emergence as a leading **disruptive** technology.

AI will drive the enterprise transformation in 2024 and beyond, with corporate investment set to skyrocket.

Types of innovation

Sustained

A significant improvement on a product that aims to sustain a position in an existing market

Disruptive

Technology or new business model that disrupts the existing market

AI

Incremental

Gradual, continuous improvements on existing products and services

Radical

Technology breakthrough that transform industries, often creates a new market

Impact to the market

Technology newness

Global corporate investment in AI

Sorted by activity from 2013 to 2022, in billions of US dollars

■ Private Investment   ■ Merger/Aquisition   ■ Monitory Stake   ■ Public Offering
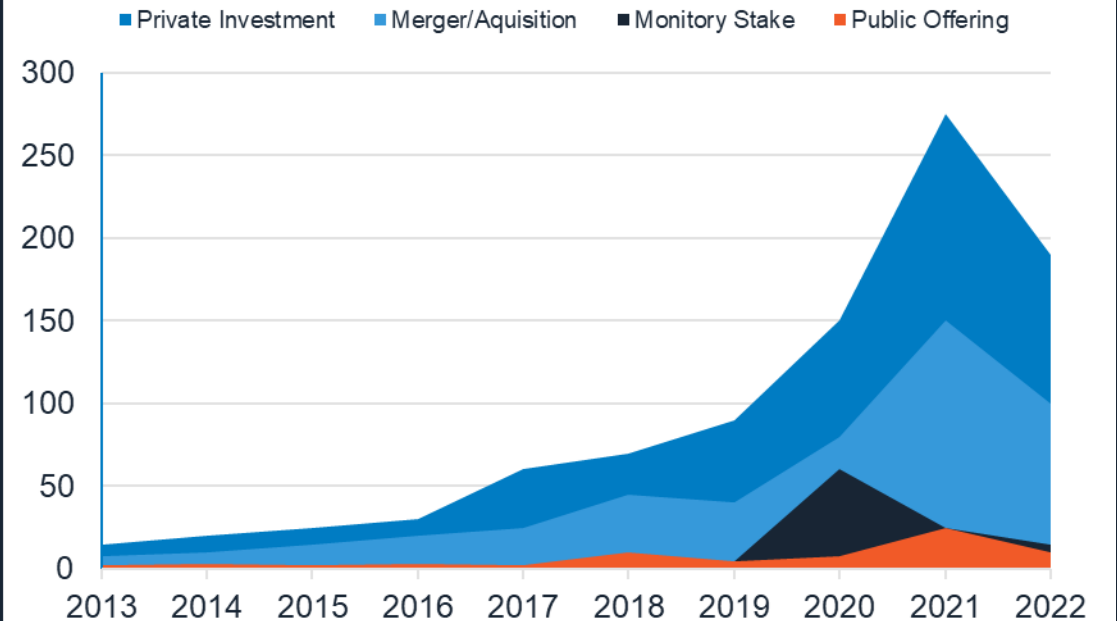
Source: Stanford Institute for Human-Centered Artificial Intelligence Created with Datawrapper, Source: World Economic Forum, 2023.

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Infosys AI-First Strategy to enable fully autonomous hyperconverged networks

Building the AI-First Organization : The organization of the future will be an AI-first live enterprise

Our Vision
AI at the center

Build an AI-first company

An AI-first company is made out of four building blocks

The AI experience

AI-first firms rethink everything about how they're experienced, from using AI-led assistants to reimagining customer journeys with AI at the center

AI engineering excellence

We explore next-generation software development and platform engineering. We also discuss the advent of AI operations, Data and MLOps for high velocity products

Responsible AI by design

We explore the challenges posed by the explosion of AI, and how organizations will need to have robust processes in place to ensure that the risks are properly managed and mitigated

The AI operating model

What does the future AI-first operating model look like? We discuss how to bring about the changes that are needed
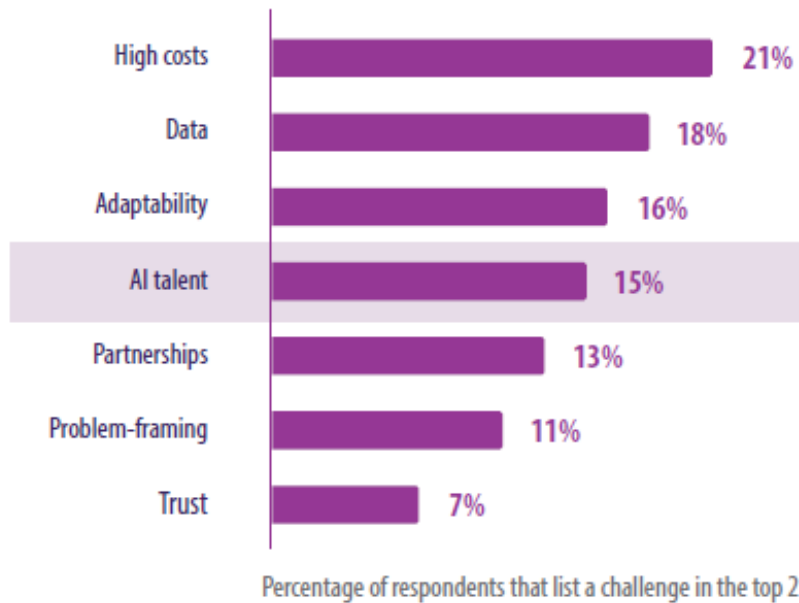
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Building an AI-first organization is now imperative.

74% of C-suite and IT executives invest their money in product management, underlining product-centricity as a key business priority.

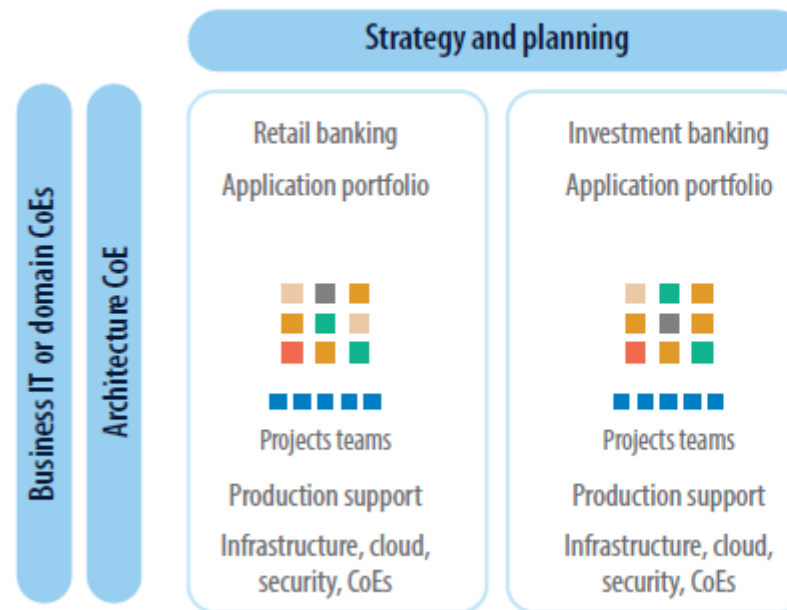More than 80% of employees say that AI makes them more productive

Infosys believes that platform engineering can save up to 40% of developers' effort building products, and enable up to 25% faster time-to-value
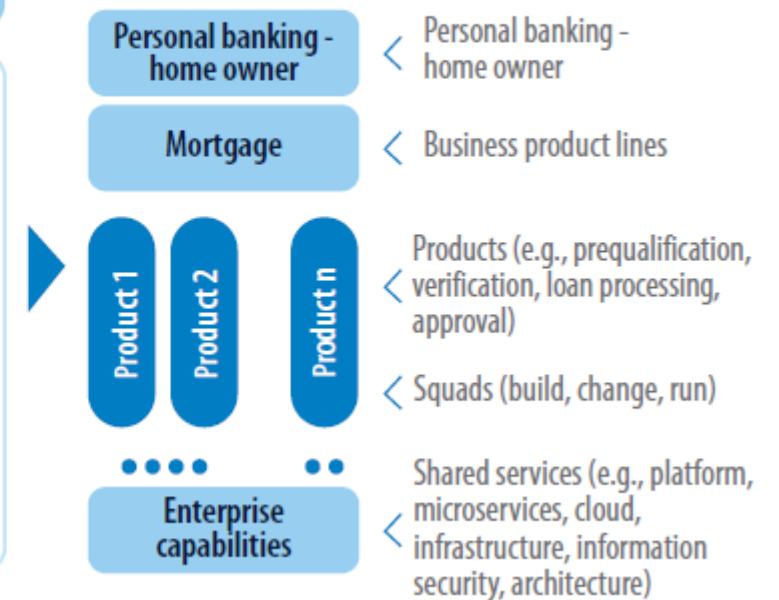

What are your company's top 2 challenges in scaling AI?

Challenge	Percentage
High costs	21%
Data	18%
Adaptability	16%
AI talent	15%
Partnerships	13%
Problem-framing	11%
Trust	7%

Percentage of respondents that list a challenge in the top 2

Source: Infosys

Traditional model

Business IT or domain CoEs

Architecture CoE

Strategy and planning

Retail banking
Application portfolio

Projects teams

Production support

Infrastructure, cloud, security, CoEs

Investment banking
Application portfolio

Projects teams

Production support

Infrastructure, cloud, security, CoEs

Product-centric operating model

Personal banking - home owner

Mortgage

Product 1 Product 2 Product n

Enterprise capabilities

Personal banking - home owner

Business product lines

Products (e.g., prequalification, verification, loan processing, approval)

Squads (build, change, run)

Shared services (e.g., platform, microservices, cloud, infrastructure, information security, architecture)

Source: Infosys

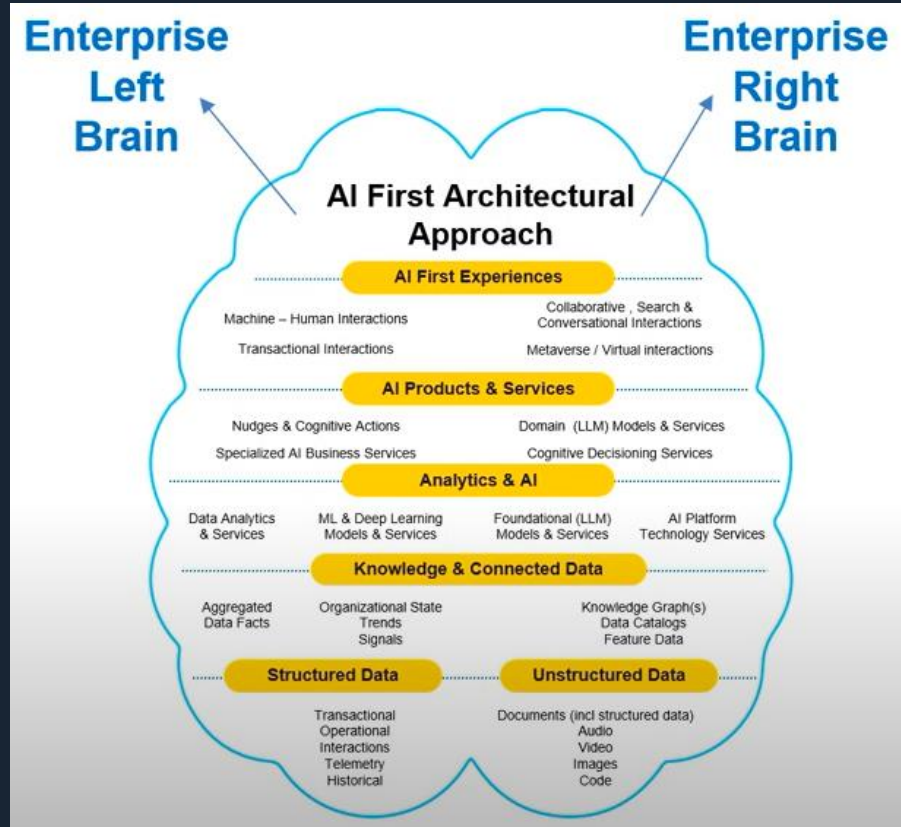© Infosys Consulting 2024

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Infosys Topaz

Infosys' Topaz AI First Innovations including AI-enabled Analytics and AI-enabled Automation to help clients in significant cost savings, improved efficiency and customer experience across industry segments.

Infosys Topaz is an AI-first set of services, solutions and platforms using generative AI technologies.

It brings the **advantage of 12,000+ AI assets, 150+ pre-trained AI models, 10+ AI platforms** steered by AI-first specialists and data strategists, and a 'responsible by design' approach that is uncompromising on ethics, trust, privacy, security and regulatory compliance.

Leveraging Infosys applied AI framework to build an AI-first core that empowers people to deliver cognitive solutions,

Enterprise Left Brain — Enterprise Right Brain

AI First Architectural Approach

AI First Experiences
- Machine – Human Interactions
- Transactional Interactions
- Collaborative, Search & Conversational Interactions
- Metaverse / Virtual interactions

AI Products & Services
- Nudges & Cognitive Actions
- Specialized AI Business Services
- Domain (LLM) Models & Services
- Cognitive Decisioning Services

Analytics & AI
- Data Analytics & Services
- ML & Deep Learning Models & Services
- Foundational (LLM) Models & Services
- AI Platform Technology Services

Knowledge & Connected Data
- Aggregated Data Facts
- Organizational State Trends Signals
- Knowledge Graph(s) Data Catalogs Feature Data

Structured Data
- Transactional
- Operational
- Interactions
- Telemetry
- Historical

Unstructured Data
- Documents (incl structured data)
- Audio
- Video
- Images
- Code

RECOGNITION
Infosys Topaz Wins at NASSCOM AI Gamechangers Awards 2023-24

RECOGNITION
Infosys Wins 2024 HPE Global AI Partner of the Year Award

RECOGNITION
Double Win for Infosys Topaz at CogX; Bags 'Enterprise Adoption of AI' Award for Second Consecutive Year

RECOGNITION
Infosys Topaz Wins Global Acclaim with Business Intelligence Group's Artificial Intelligence Excellence Award

ANALYST RECOGNITION
Infosys Positioned as a Leader for the Second Time in the IDC MarketScape: Worldwide Artificial

ANALYST RECOGNITION
Infosys rated as a Leader in HFS Horizons Report for Generative Enterprise™ Services, 2023

UNLOCKING THE FULL VALUE OF AI REQUIRES DEEP CONNECTION TO BUSINESS STRATEGY, COMMERCIALS AND CUSTOMER AND EMPLOYEE EXPERIENCE.

Conclusion

The 5G journey is just the beginning. As we move towards 6G, the convergence of space and terrestrial networks, coupled with advanced technologies, will unlock new possibilities. By embracing hyperconverged TMT networks, we can build a future where connectivity is ubiquitous, intelligent, and sustainable.

To enable this change and technology adoption Telco's need to redefine the way the consume technology and enable new use cases through a structured business transformation

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THANK YOU

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Helping you connect the dots
in today's digitally-connected world

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