Agentic AI for Telecom

Moving Beyond Automation

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Agenda

1. Industry Insights

2. Goals, Gaps, Approach

3. Agentic AI for Automation

4. Accenture in Agentic AI for Telecom

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A Renaissance for Connectivity

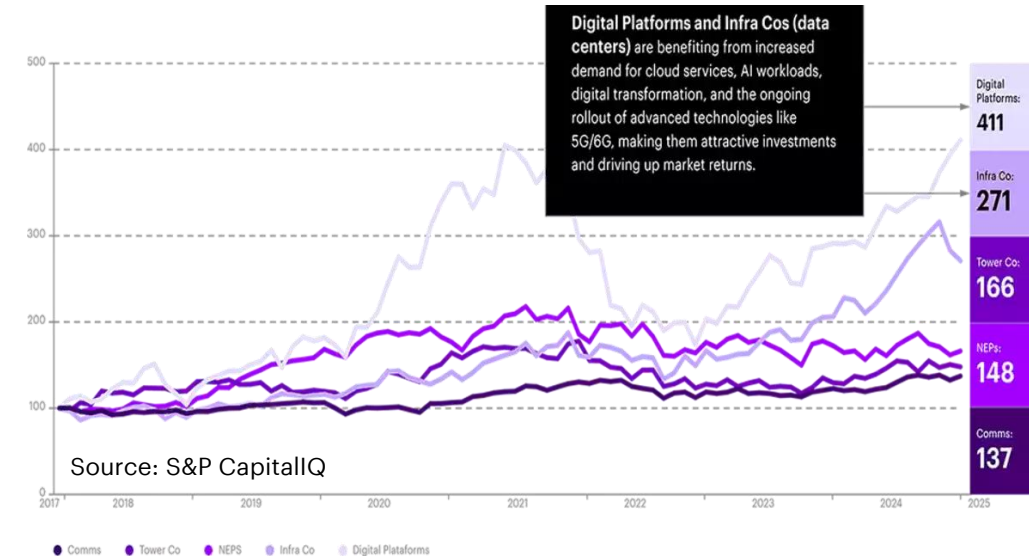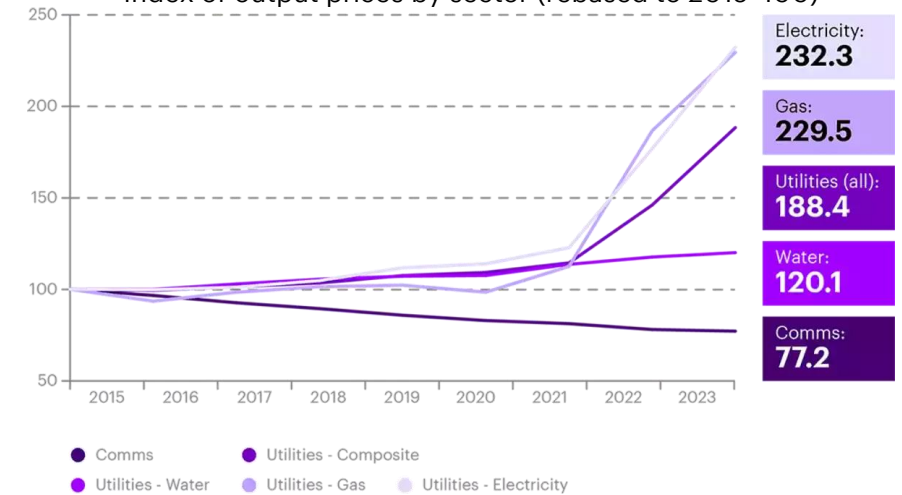## How can telcos create new value in the AI economy?

New tech order offers telcos the chance to change course towards growth and resilience

A tech-driven renaissance awaits telcos that reorient their networks, digital core and data operations to meet the demands of AI

Seize new B2B and B2C markets where premium pricing is the prize for advanced services

Lower telco industry output prices reflect rising commoditization
Index of output prices by sector (rebased to 2015=100)*

Electricity: **232.3**
Gas: **229.5**
Utilities (all): **188.4**
Water: **120.1**
Comms: **77.2**

Legend: Comms · Utilities - Composite · Utilities - Water · Utilities - Gas · Utilities - Electricity

Digital Platforms and Infra Cos (data centers) are benefiting from increased demand for cloud services, AI workloads, digital transformation, and the ongoing rollout of advanced technologies like 5G/6G, making them attractive investments and driving up market returns.

Digital Platforms: **411**
Infra Co: **271**
Tower Co: **166**
NEPs: **148**
Comms: **137**

Source: S&P CapitalIQ

Legend: Comms · Tower Co · NEPS · Infra Co · Digital Plataforms

Source: Accenture Research Report A Renaissance for Connectivity | Accenture

Driving growth in the new tech order starts with the telco tech stack

- ❑ Create modern networks by and for the AI era
- ❑ Transform business with digital core that 'disentangles' the infrastructure
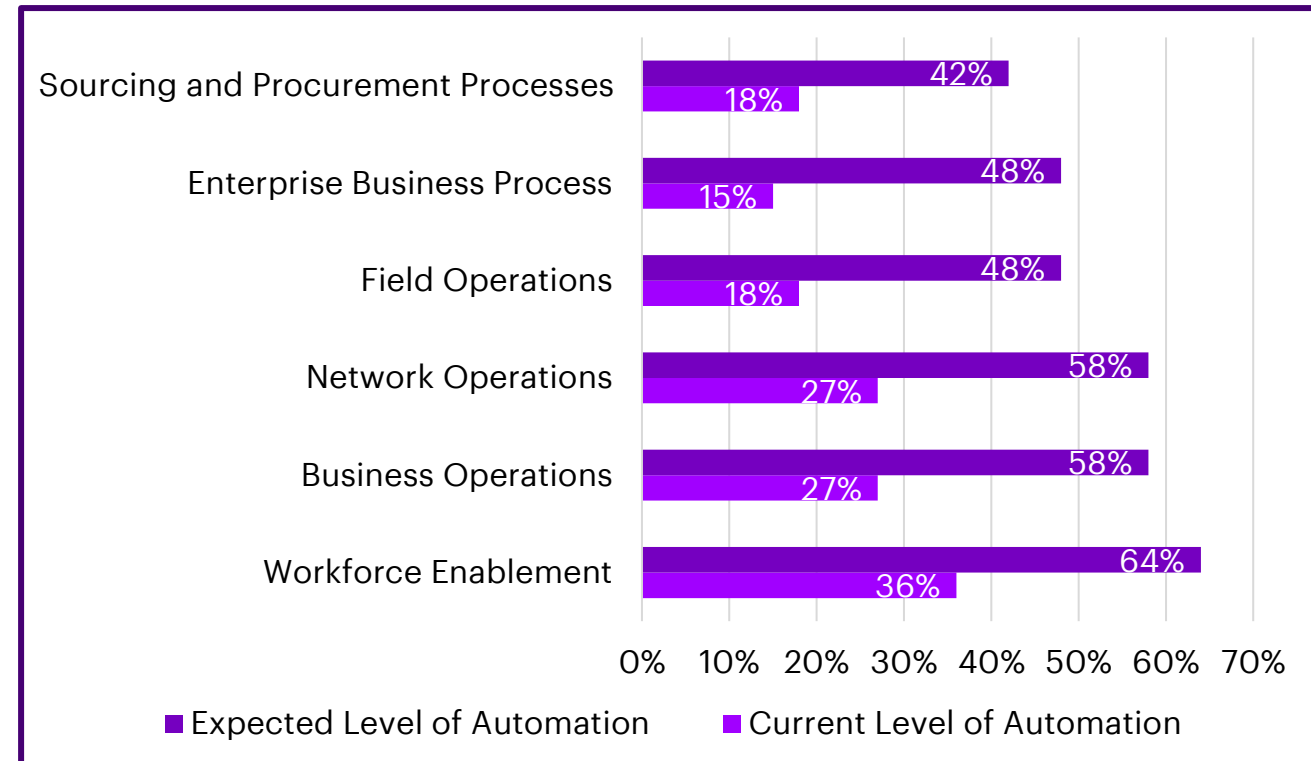- ❑ Become and AI Telco – master AI on the inside to sell AI services outside

- ❑ Redefine B2C growth models with the power of AI & consumer marketing
- ❑ Become the connected infrastructure platform for B2B
- ❑ Transform business and growth by delayering operating models

The new tech order will drive the new AI economy

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Automation Priorities

50% of CSP CTOs expect to reach 60% automation level of operations in next 12-18 months

Automation Goals by CSP C Level

Category	Expected Level of Automation	Current Level of Automation
Sourcing and Procurement Processes	42%	18%
Enterprise Business Process	48%	15%
Field Operations	48%	18%
Network Operations	58%	27%
Business Operations	58%	27%
Workforce Enablement	64%	36%

■ Expected Level of Automation ■ Current Level of Automation
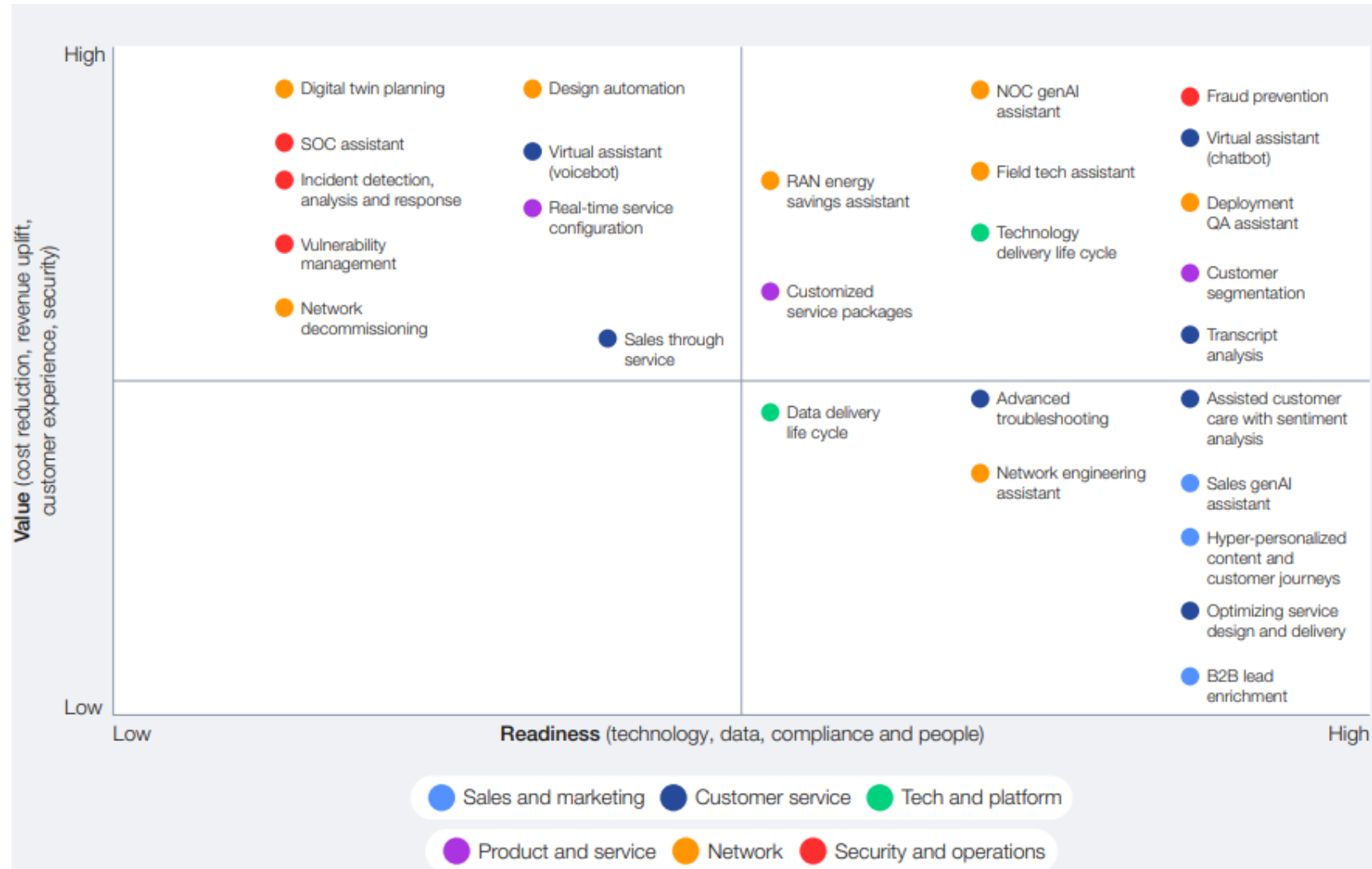
Main targets are Business Processes, Business and Network Operations

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AI Scaling & Industrialization in Telecom

Telco is expected to accelerate AI scaling & industrialization within 18 months, with 10 scenarios identified as current top priorities

Value (cost reduction, revenue uplift, customer experience, security) — vertical axis (Low → High)

Readiness (technology, data, compliance and people) — horizontal axis (Low → High)

- Digital twin planning
- SOC assistant
- Incident detection, analysis and response
- Vulnerability management
- Network decommissioning
- Design automation
- Virtual assistant (voicebot)
- Real-time service configuration
- Sales through service
- RAN energy savings assistant
- Customized service packages
- NOC genAI assistant
- Field tech assistant
- Technology delivery life cycle
- Fraud prevention
- Virtual assistant (chatbot)
- Deployment QA assistant
- Customer segmentation
- Transcript analysis
- Data delivery life cycle
- Advanced troubleshooting
- Network engineering assistant
- Assisted customer care with sentiment analysis
- Sales genAI assistant
- Hyper-personalized content and customer journeys
- Optimizing service design and delivery
- B2B lead enrichment

Legend:
- ● Sales and marketing
- ● Customer service
- ● Tech and platform
- ● Product and service
- ● Network
- ● Security and operations

WORLD ECONOMIC FORUM
COMMITTED TO IMPROVING THE STATE OF THE WORLD

AI in Telecommunications
– white paper Feb'25 –
In collaboration with Accenture

The Industry Imperatives

1 Reduce Cost to Serve

2 Drive Business Growth

3 Differentiate Customer Exp.

4 Secure & Reliable Ops

The Autonomous AI tech stack reinvention

- **AI Agentic** applications are reshaping Network Value chain with AI, accelerating Autonomous Network Journey.
- An **AI agent-operated "super platform"** is rising with agents that can **think, act, and respond** in real time

Source: https://reports.weforum.org/docs/WEF_Artificial_Intelligence_in_Telecommunications_2025.pdf

CxOs agree lack of readiness across multiple dimensions acts as barriers for AI native organization

Risk and benefits based on Accenture customer experience

47% of CxOs say **data readiness and integration complexity** are top challenge with applying generative AI

Data Readiness

63% say at least half their workers have received **AI training** but…   only **5%** have reached the full workforce

Talent Readiness

Only **2%** of companies have identified as having fully operationalized **Responsible AI** across the organization, with a further 31% expected to do so in the next 18 months

Ethical Readiness

36% attribute workers' reluctance to embrace GenAI to a lack of technology understanding making **change management** crucial

Adoption Readiness

- *Source: https://www.accenture.com/us-en/services/data-ai/generative-ai*
- *Generative AI Future of Work Talent Transformation | Accenture*

Holistic transformation approach is required to unlock value

Key transformation enablers

Operating Model

- Process simplification
- Products standardization
- Common KPIs
- Seamless business - IT interlock
- Customer centricity

Technology Stack

- Single source of truth
- Simplification and convergence
- Standardization & openness
- Keep the human in the loop
- Protect service continuity

Data and AI

- Improve visibility to cost and service performance
- Automate key reporting
- Fast root-cause
- Fix data & Drive realized value

Ecosystem Partnership

- Rationalise vendor landscape
- Avoid lock-in
- Foster Partners co-creation
- Business outcome sharing
- Ecosystem Integrator partner with Strategic SI DNA

Skills and Talents

- Infuse talent for new Digital products
- Upskill and transform the workforce
- Culture change
- Shift mindsets to value, responsiveness, collaboration and quality
- One team approach

Balance VALUE, Cost and risk, while keeping business continuity

DTW 24 Copenhagen:

Carriers need to redefine their role in the AI era

Beyond efficiency, consider customer experience and growth potential

The future of connectivity is to deliver solutions based on customer needs, not technology

Nik Willetts, CEO, TMF

Many people lost their jobs when they realized they couldn't grow by cutting costs alone

We should focus on service-oriented revenue growth from the start.

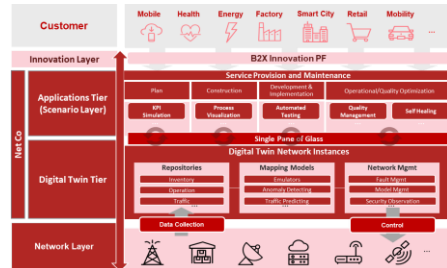Peter Jarich Head of GSMA Intelligence, GSMA

Implementing technology is easy; transforming processes and people is more difficult

Organizational roles, responsibilities, and remuneration a adapted to fit a digital framework
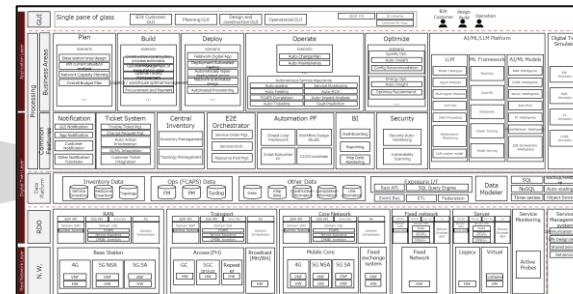
Manjot Singh Mann CEO, M1

# How are operators undertaking the journey towards AN Level 4 ?

Strategic & Organizational Alignment

Alignment across the organization for implementing the AN journey to drive collaboration, creation of roadmap, define responsibility & establish the success criteria.
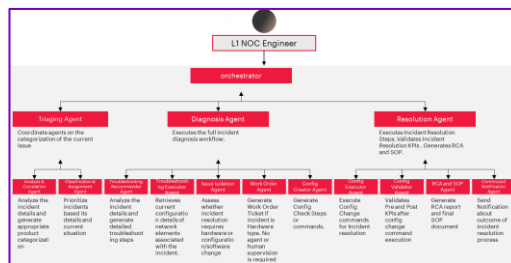

Define the North Star

- Create the OSS blueprint for defining the target state & assessing the readiness for AN.
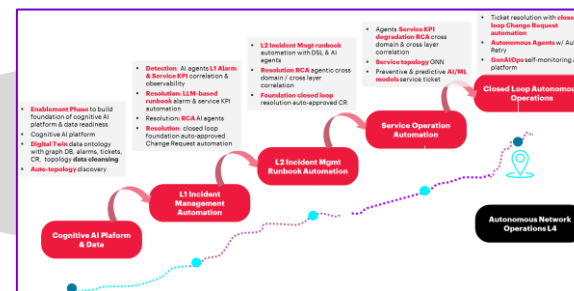- Define the target metrics, **to-be** processes & prioritized roadmap for implementing AN.
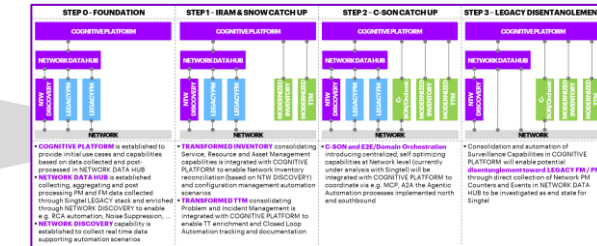
Plug in the GAPS

- Implement the OSS modernization journey.
- Establish the data accuracy & comprehensiveness

Scale-Up

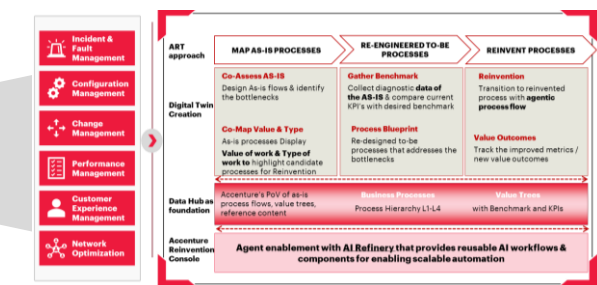- Leverage the learnings from Pilot implementations
- Continually evolve the operating model for maximizing the value

Foundational readiness & Pilot Implementation

- Establish the efficacy of the AN use cases
- Document the learnings

Identify the key Process/Network Domains (Impact Vs Complexity)

- Define the metrics for improvement
- Ascertain the data comprehensiveness & accuracy

Critical success factors based on our experience

OSS Blueprint

- Assess **existing toolsets and digital ecosystem maturity** for smooth delivery of the use cases.
- Definitions and guidelines for **AI Governance** across the organization based on agreed standards for AI building
- Rules/Checklist for data and AI models for controlling integrity, security & quality of AI

Timely Infra-availability

- Timely availability of the **required infrastructure** for application deployment.
- Access to the Kafka queues, APIs from **existing platforms for integration**

Network & OSS vendor participation

- Discussions with vendors to understand **specific system functionalities, data sets and limitations**.
- Discussion on **required list of APIs, scripts feasibility and expected outcomes**.
- Align with vendors and **ensure relevant support** from them in the transformation journey.

Collaboration

- Use case **workflow finalization** along with system identification.
- **Align** on expected outcome and success criteria.
- Organization model **defining governance structures** and the allocation of **decision-making responsibilities**
- Monitor the use case deployment and share **relevant feedback** during UAT/deployment to address any concerns on time.
- **Timely** approvals and signoff so as to move to next stage of the program

Training & Awareness

- **Up-skilling** of resources for the Agent lifecycle management
- **Enablement** for developing and enhancing the functionalities of the agents
- **Create awareness** for the implemented process across the stakeholder groups
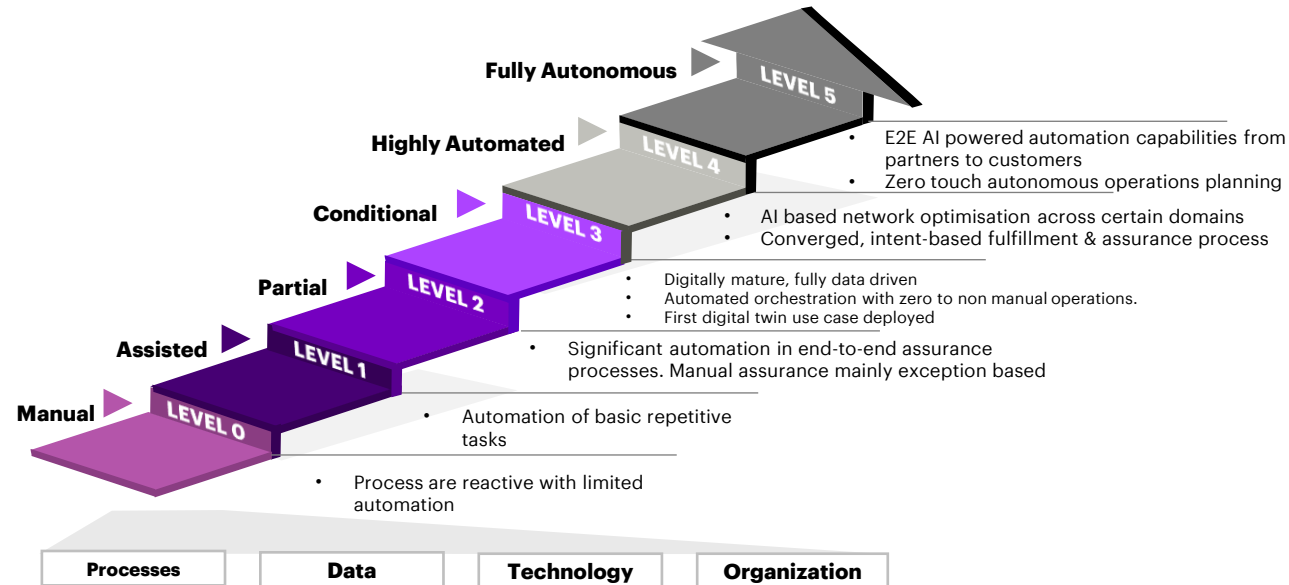
Value Tracking

- **Continuously monitor** the **efficiencies** unlocked by deployment of use cases across different stages.
- **Uprise** program **stakeholders** on key leading, lagging matrices.
- Stakeholder involvement in **realizing the values as per plan**.
- **Continuous improvement** lifecycle on AI agent, data, AI/ML models algorithms, assumptions & monitoring.

The Autonomous Networks Blueprint

The journey to "Zero X" experience: Zero Wait, Zero Touch, Zero Trouble

AI Agentic-Driven Automation across Network as a critical lever for value creation

8% Annual Revenue incremental growth achievable through holistic AI adoption

10-15% Reduction in service costs through AI-driven automation and optimization

20–40-Point increase in customer satisfaction scores with enhanced AI capabilities

Fully Autonomous — LEVEL 5
- E2E AI powered automation capabilities from partners to customers
- Zero touch autonomous operations planning

Highly Automated — LEVEL 4
- AI based network optimisation across certain domains
- Converged, intent-based fulfillment & assurance process

Conditional — LEVEL 3
- Digitally mature, fully data driven
- Automated orchestration with zero to non manual operations.
- First digital twin use case deployed

Partial — LEVEL 2
- Significant automation in end-to-end assurance processes. Manual assurance mainly exception based

Assisted — LEVEL 1
- Automation of basic repetitive tasks

Manual — LEVEL 0
- Process are reactive with limited automation

Processes	Data	Technology	Organization

Operational Efficiency

57% Reduces the cost of **Ops & Mgmt**

27% **Automated Service Provisioning**

Resource Efficiency

55% Increase in res. **Efficiency** & **Utilization**

21% **Energy Savings** to sustainability goals

Experience Excellence

71% Improved **Customer Experience**

26% Proactive Optimization of Service Quality

AI Agentic-Driven Automation Generates Value Across Network Lifecycle

	N/W PLANNING AND DESIGN	DEPLOY & BUILD	ENGINEER, DISAGGREGATE & SECURE	OPERATE
Automation Driver	Lower capital	Lower capital	Innovative Infrastructure and Scalability	Automated and Cost-Effective Operations
Automation Benefits	• Capex Efficiency: +5-15% • OpEx Reduction: 5%	• Network Quality: +10% • Network Build Speed: +20%	• 5-10% Rev from Ent • For Enterprise: 20% lower NW OpE	• 5-10% Rev from Ent • For Enterprise: 20% lower NW OpE
Selected Use cases	• Smart Network Planning with AI Assistant • Fiber Design Agent	• Fiber Deployment Agent • Field Tech Agents for Installation	• N/W Eng. Agentic App • Network Benchmarking • SOC Assistant	• NOC Agentic App • Energy & Perf Mgmt. • Field Tech Agents

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Agentic AI

What is Agentic AI

Agentic AI integrates **large language models (LLMs), machine learning, and enterprise automation** to create autonomous AI agents capable of **decision-making, goal-setting, problem-solving, and adapting to unstructured environments**, unlike rule-based AI

Goal Oriented Behavior

AI agents adapt in dynamic environments to achieve specific goals that lead to effective actions

Iterative Plan & Reason

AI agents can recall past interactions and learn from them, using this memory to improve their future actions

Decision-Making

Can make choices and select actions based on its goals and current information

Autonomy

Operates independently, performing tasks and making decisions without constant human intervention

GenAI vs AI Agent vs Agentic AI: Layers of Hybrid Intelligence

Unfolding the complex dimensions of modern AI to harness its core underlying abilities

	LLM (Large Language Models)	**LLM + RAG**	**RAG (Retrieval-Augmented Generation)**
Generative AI	Text Generation • Knowledge Recall Conversational Memory • Chain-of-Thought reasoning Natural Language Understanding (NLU) • Natural Language Generation (NLG)	Contextual Generation • Semantic Search Reduced Hallucination • Prompt + Retrieval fusion	Vector Search • Document Chunking Query Reformulation • Source Attribution Metadata Filtering • Grounded Answer generation
GenAI + Agentic AI/AI Agents	**LLM + Agentic AI** Prompt driven execution Multi-turn reasoning	Reasoning • Context awareness Autonomy • Semantic understanding	Retrieval+ Execution pipeline • External Data-augmented action Query based planning • Long term context memory Domain Specific tool calls • Factual Task execution **RAG+ AI Agent**
Agentic AI/ AI Agents	Autonomous Goal Planning • A2A Protocol(Agent-to-Agent) Agent orchestration • MCP (Model Context Protocol) Role specific Agents • Multi-agent collaboration	Task Orchestration • Feedback driven adaptation State memory propagation • Autonomous Planning	Planning + Execution • Task Decomposition Tool use & API Calling • Code Execution File access/ interaction • Short + Long term memory
	Agentic AI	**AI Agent + Agentic AI**	**AI Agent**

Agentic Application features a hierarchy of agents, each with its own role to drive automation of complex workflows

① Agentic Application Hierarchy Definition

1.
Key Persona
- Who the agents are supporting
- The persona's prompt sets the AI Agents' goal

2.
Orchestrator Agent
- Understands prompt and assigns tasks to agents
- Coordinates task approach across multiple Super agents, and in some cases, will directly call Utility agents

3.
Super Agents
- Understands your intention and the goal
- Mobilizes a configuration of necessary Utility agents to achieve that goal

4.
Utility Agents
- Specialists trained to be experts in a single capability, such as research or analytics

② AI Agent Hierarchy Tree

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NOC AI Agents in Action

Incident Assigned

NOC Engineer

Incident Resolved

To re-solve this incident, NOC Engineer needs to...

- Analyze the issue
- Refer Historical tickets, KB's
- Identify resolution steps
- Perform resolution action
- Verify resolution action
- Document Generation (SOP)
- Resolve the ticket

Human In Loop

Multi-Agent Orchestrator

GenAI Assistant

Prompt Library | FAQ Library | Q&A | Invoke AI Agent

1. Troubleshooting Steps | Invoke AI

1. **Initial Investigation:**
- **Date:** 2024-06-08
- **Submitter:** ISA
- **Details:** Internet slowness reported on the 5th Floor, Tower B.

2. **Communication with Client:**
- **Date:** 2024-06-08
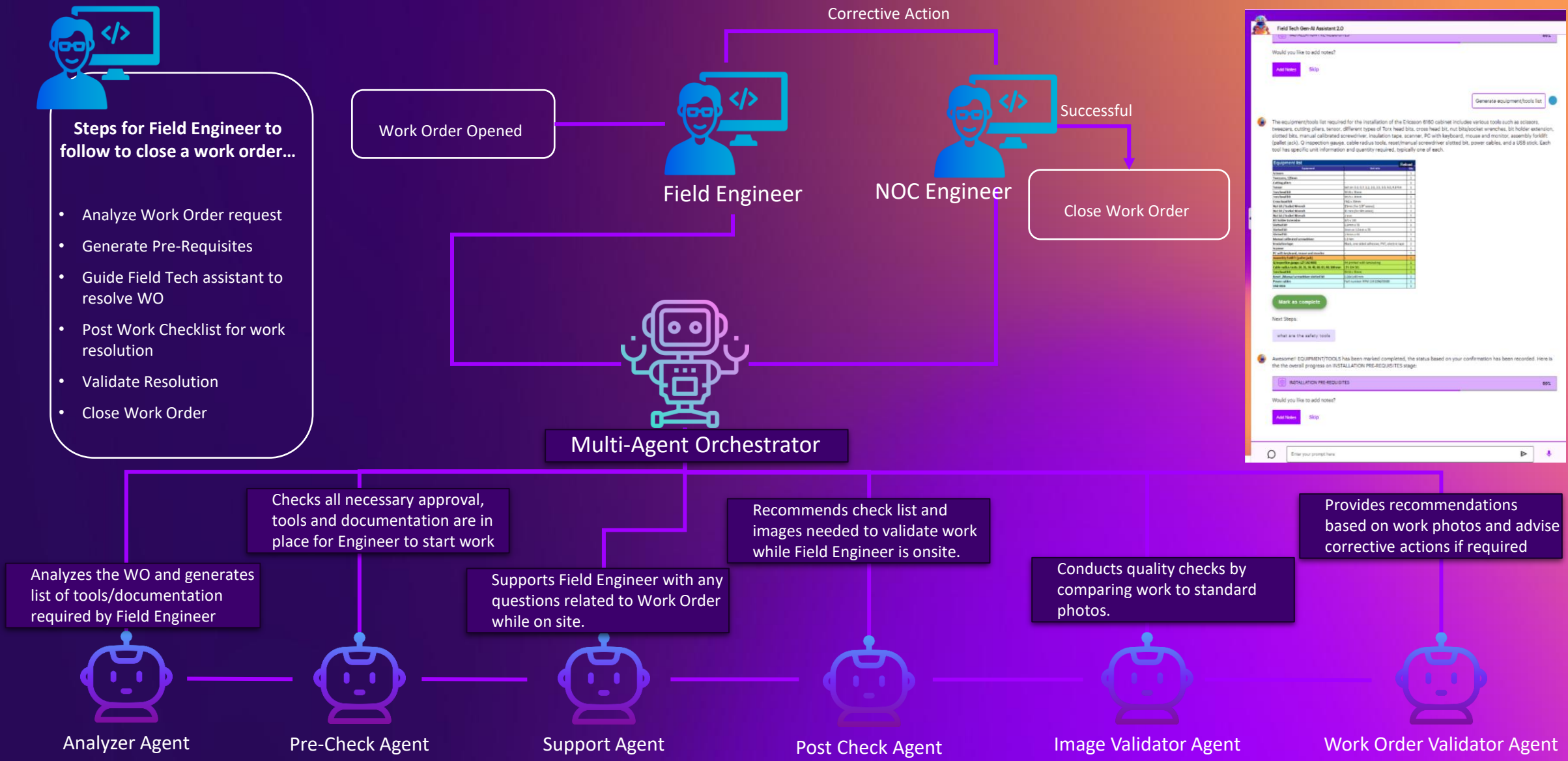- **Submitter:** ISA
- **Details:** Client confirmed that the internet was working fine after the troubleshooting call and requested to close the incident.

3. **Assignment of Incident:**
- **Date:** 2024-06-08
- **Submitter:** ISA
- **Details:** The ticket was assigned to AB.G.Incident Management and subsequently to AB.G.Data.L2.

4. **Action Taken:**
- **Date:** 2024-06-08
- **Submitter:** p.ck.kumar
- **Details:**
- Problem statement: Slowness for all users both LAN and WiFi.
- Action taken: Both primary and secondary links were set to active-active configuration, which improved the services. This was confirmed by the end users on a call.

Analyze the assigned ticket, research similar incidents data and KB articles

Create troubleshooting steps to resolve ticket such as configuration changes

Executes automation runbooks of configuration changes into EMS

Change fulfilment checks before and after configuration changes

Updates issue notes/SOP with all information related to issue resolution

Researcher Agent

Planner Agent

Executor Agent

Validator Agent

Documentation Agent

Field Tech Agents in Action

Steps for Field Engineer to follow to close a work order…

- Analyze Work Order request
- Generate Pre-Requisites
- Guide Field Tech assistant to resolve WO
- Post Work Checklist for work resolution
- Validate Resolution
- Close Work Order

Work Order Opened

Corrective Action

Field Engineer

NOC Engineer

Successful

Close Work Order

Multi-Agent Orchestrator

Analyzes the WO and generates list of tools/documentation required by Field Engineer

Checks all necessary approval, tools and documentation are in place for Engineer to start work

Supports Field Engineer with any questions related to Work Order while on site.

Recommends check list and images needed to validate work while Field Engineer is onsite.

Conducts quality checks by comparing work to standard photos.

Provides recommendations based on work photos and advise corrective actions if required

Analyzer Agent   **Pre-Check Agent**   **Support Agent**   **Post Check Agent**   **Image Validator Agent**   **Work Order Validator Agent**

Accenture has deeply invested with partners in building a Cognitive AI Platform for Autonomous Networks

Single Pane of Glass
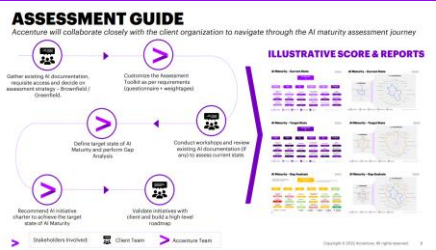(Network, Service & SLA Monitoring, Crowd/Drive Test visualization , Optimization task visualization status, ML/AI & Agent management)

Powered by:
AI REFINERY
>

TelCo Legacy/NG OSS
(FM/PM, ITSM, WF automation)

Network Agentic Applications
(Agent orchestration, common agent, pre-built utility Network Agents)

| Front Office Agents | Back Office Agents | Optimization Agents | Planning and Design Agents | ... |

Network Brain
(Data Product built on Search Engine, Knowledge Graph, Vector Database, Vector Search Engine)

| Inventory DP | Logs DP | Alarms DP | MOP/SOP DP | Ticket DP | KPIs DP | Config. Data Products DP |

Network Knowledge Connectors & Preparation
(Extraction, Scanning, labeling, summarizing, aggregation, vectorizing)

AI/ML Models

Agent Builders / Agent Garden

Configuration Mgmt

Control & Governance

Automation Delivery
(CI/CD, Testing)

Data Ingestion/Data Transformation/Data Lake
(Events, Traces, Alarms, counters, configurations collection)

Network Data Platform

| Physical Infra | Cloud Platforms | Network Functions | Domain managers | Devices | External Data source | Unstructured Data | | Drive Test | Probes | Crowd Sources | NMS/ EMS | Topology (e.g., Fiber) |

CISCO ERICSSON NOKIA JUNIPER NETWORKS

Infrastructure
(Cognitive Compute, AI Enablers)

Partners Ecosystem:

aws Palantir

Not Exhaustive

Core AI assets & accelerators (1/2)

To support target architecture and roadmap design we are leveraging several assets and accelerators to support efficient delivery and introduction of leading practice concepts and IP

AI Assessment Framework

Accenture's **AI Assessment Framework** performs a 360° analysis of an organisation's current AI maturity state and provides targeted recommendations to achieve the desired level of AI maturity.

Key asset that drives the as-is assessment to deliver initial insight on key architecture gaps.

AI Reference Architecture

Accenture's detailed AI Reference Architecture library has been built from thousands of client engagements; segmented by industry specifics, a comprehensive architecture to design around.

This anchors both the maturity assessment but also target design with clear capability models and specific hyperscaler and AI vendor implementation examples.

AI Refinery™

Accenture's AI Refinery is a unified platform, designed to accelerate development of enterprise AI use cases at scale, at a lower cost compared to bespoke/self-hosted solutions.

AI Refinery comprises of four capability groups: AI Agents, AI Knowledge Management, Model Management and AI Governance (including Responsible AI)
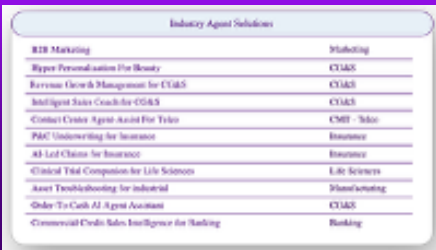
Agent Pattern Library

Access to Accenture's Library of 20+ industry specific Agents, containing both pre-built Agents and established Agent design patterns.

Leverage reference patterns to detail out key Agent archetypes and common data and feature integrations to rapidly develop Agents at scale.

Core AI assets & accelerators (2/2)

To support target architecture and roadmap design we are leveraging several assets and accelerators to support efficient delivery and introduction of leading practice concepts and IP

AI COE Operating Model

Accenture's AI COE Framework is a comprehensive methodology for designing an AI COE that is tailored to a client's strategy and industry drivers.

This is a key asset that will underpin the non-technical architecture considerations to help establish how your technology teams will work alongside the new Activators.

RAI Platform

Accenture's RAI platform is an automated, end-to-end platform designed to empower the enterprise to implement and scale responsible AI with trust and confidence.

This asset will accelerate the RAI specific components including a review of existing capability and alignment with emerging global standards plus technical architecture to efficiently implement the RAI policies.

AI Refinery™ – Trusted Agent Huddle

Trusted Agent Huddle provides a secure and unified system for enterprise users to discover, on-board, manifest, and optimise AI Agents across multiple providers and heterogenous platforms into AI Refinery.

This asset will underpin critical Agent orchestration architecture supporting seamless integration across Agent platforms.

Value Realisation Framework

The Value Realisation Framework is designed to accelerate development of end-to-end capability for identification, implementation and ongoing monitoring of high ROI use cases.

The asset will compliment the technical architecture to ensure the wider operating model processes are in place to drive high-value use case delivery.

Accenture's investment in AI with state-of-the-art technology and proven best practices

AI Capabilities

3B USD

Our investment in capabilities to accelerate client's AI journeys

1.6K+

Generative AI skilled professionals

69K +

Data & AI Professionals (5k+ professionals in Telco)

6K

Data scientists and certified data architects

20+

Years of data management experience

2,000+

Generative AI projects for clients

AI Refinery™ acceleration asset

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4 Data Innovation Centers +
2 Data Studios +
2 innovation labs

120+

Prebuilt Accelerator assets

1,496

Data and AI patents

8

Foundation Model Sandboxes in multiple clouds and on-prem

Top AI partners and collaborations

OpenAI   NVIDIA

Microsoft Azure   Google   CRESTA

scale   amazon web services

co:here   SambaNova SYSTEMS

AI Thought Leadership

AI in Telecoms 2025

AI Governance Alliance
In collaboration with Accenture
Transformation of Industries in the Age of AI
WORLD ECONOMIC FORUM
Artificial Intelligence in Telecommunications
WHITE PAPER
FEBRUARY 2025

Tech Vision 2025

Technology Vision 2025
AI: A Declaration of Autonomy
Is trust the limit of AI's limitless possibilities?
accenture

AI Point of View

accenture
A new era of generative AI for everyone
The technology underpinning ChatGPT will transform work and reinvent business