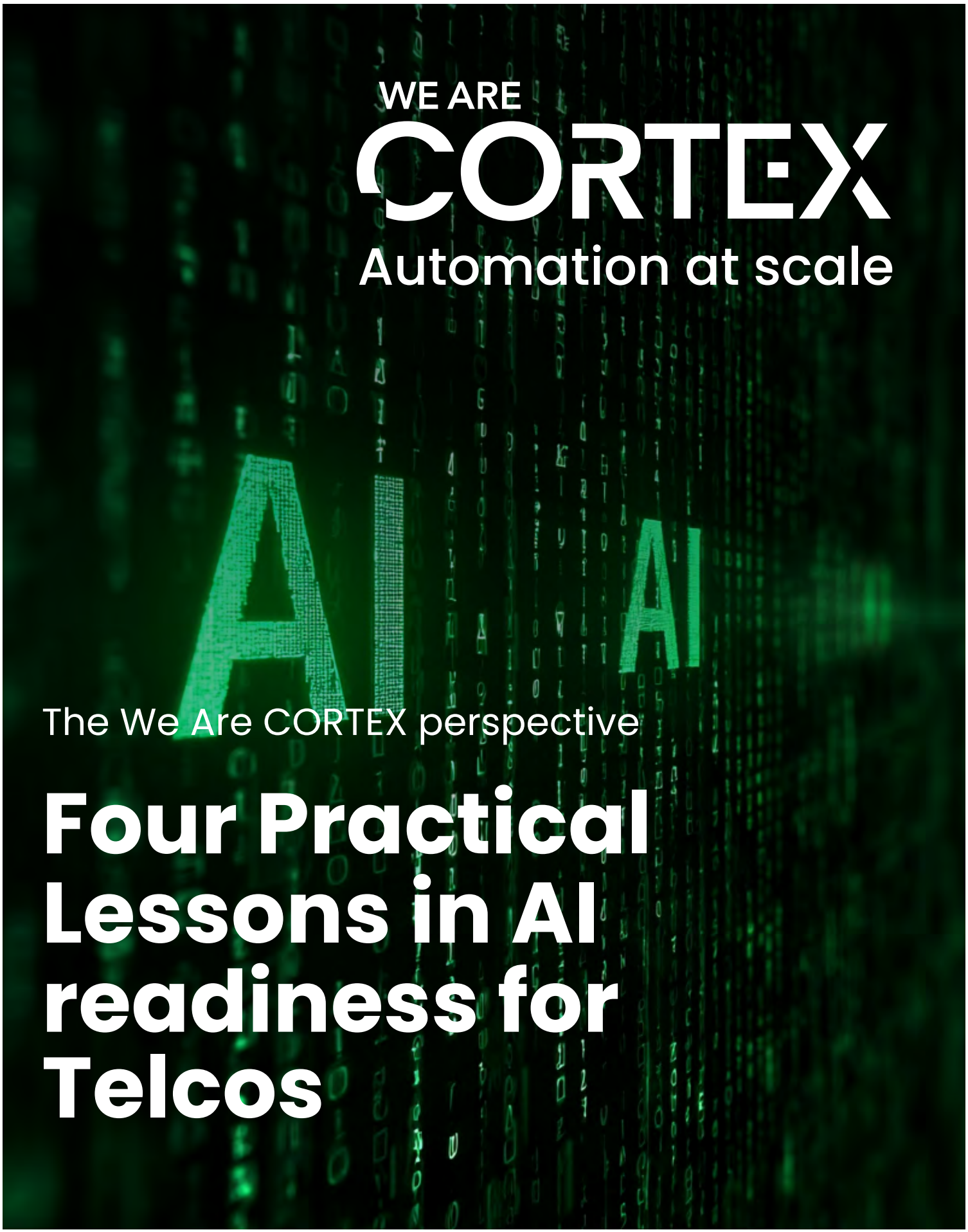

The We Are CORTEX perspective

Four Practical Lessons in AI readiness for Telcos

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Introduction

Focusing on AI Innovations that deliver value today

In our previous paper, we discussed the current state of AI in telecoms, looking at aspirational initiatives, as well as the current reality. While AI is set to revolutionise the telecoms sector there is a disconnect between the hype and the current status of deployments. We noted that Gen AI adoption has overtaken Core AI, largely due to the quick benefits it can bring to the customer experience offered by telcos – boosting self-service and information discovery.

Core AI, meanwhile, has long been on the table – but adoption is slower, because it impacts core operations.

At the same time, Agentic AI is also making inroads, providing proactive behavioural models that can facilitate process interactions. In truth, all will play their part – particularly as we grapple with increasingly complex network functions, the operations to support them, and the interaction of different processes with each other and with humans.

With this understanding, We Are CORTEX is pursuing an innovation strategy that embraces all dimensions and types of AI, across four key areas:

- LLMs in process flows
- Assisted processes
- Design Co-Pilot
- AI Agent Orchestration

So, in this paper we will explore some early implementations, drawing on some of our learnings and experiences gained from working hand-in-hand with customers as they advance on their transformation journeys.

This is important, because the focus must be on pragmatic innovations that deliver true value today – not only on aspirational concepts that offer uncertain benefits and potential risk.

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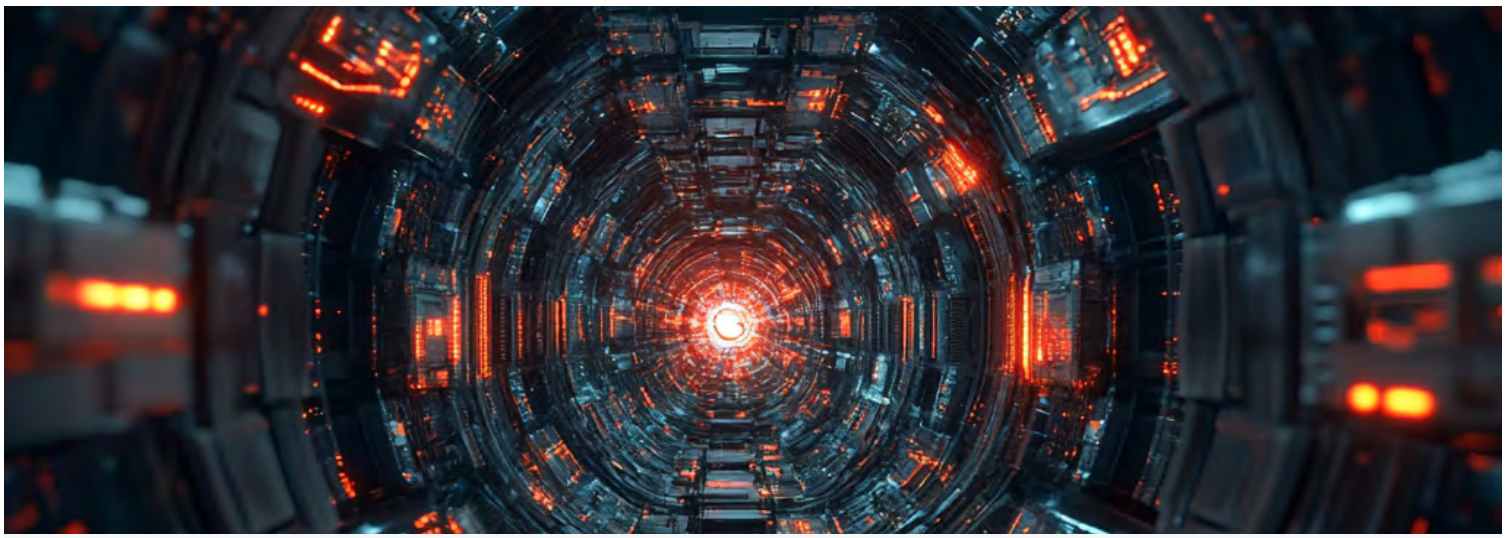

Lesson One:

LLMs in process flows

Large Language Models (LLMs) are used to analyse and process large data sets, extract key information from different data sources (and translate data sources), present the data in a digestible format, provide business and customer insight, and take decisions to rectify any issues.

As such, they provide data processing capabilities that can be applied, with the right training, to tasks in telecoms networks. They can be embedded in workflows to enable intelligent data handling and to boost automation.

Zero-touch Service Assurance

Service assurance is a time consuming but essential discipline that touches multiple points in the OSS domain. LLMs can provide numerous benefits, assisting automation and relieving humans from the burden of searching for information to solve problems, across multiple sets of complex data by bringing together and correlating crucial information from different sources.

For example, when faults are detected in a network, data needs to be captured so that Root Cause Analysis and other related tasks can be performed – and, eventually, the fault can be rectified.

While automation can already enable many such faults to be resolved without human intervention — and the number is growing — records of the issues and the resulting actions also need to be captured for audit, trace and tracking purposes.

However, the problem is that the different inputs for resolving faults (autonomously or otherwise) contain different formats of data. Parsing and interpreting these different data typically needs deep domain expertise.

LLMs offer a remedy. With the right training, LLMs can be taught to interpret different inputs and generate human-readable outputs that summarise the information the LLM has ingested.

For example, information relevant to a fault condition can include a wide range of data sources, such as:

- SNMP reports
- Performance management counters
- Information from inventory systems
- Network data
- Fault and configuration management data
- And more…

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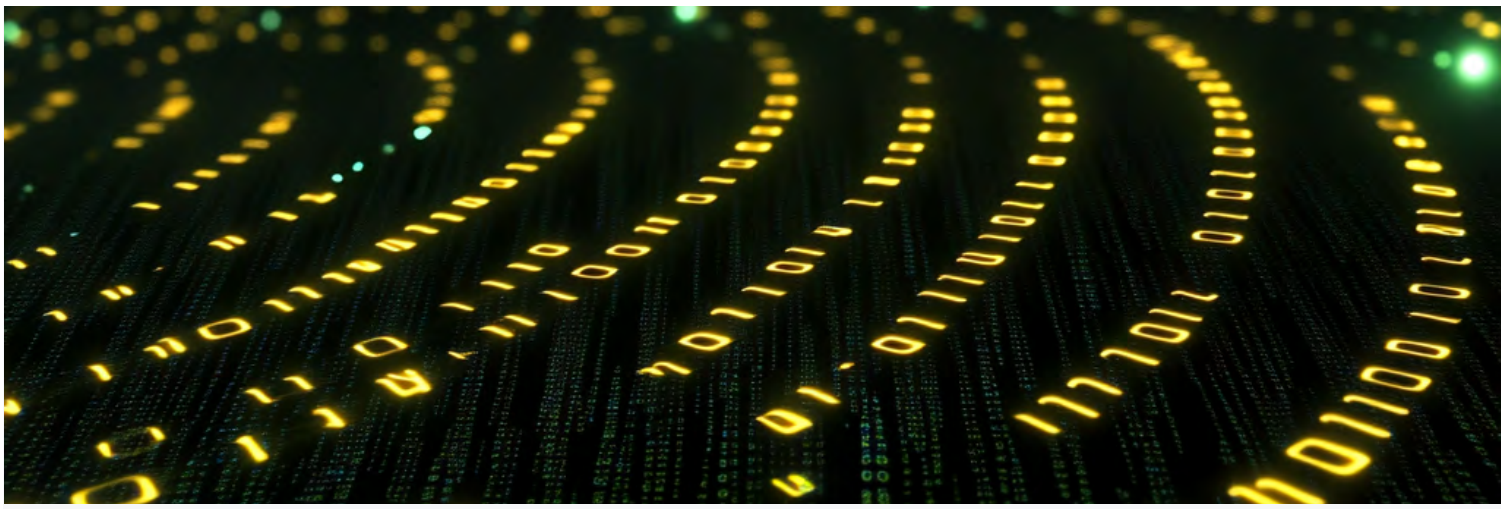

By collecting these inputs, interpreting them, and then presenting them in a human-readable format, an objective report can be created by the LLM, with remedial actions suggested (often based on deterministic flows in which alarm x requires response y, for example), alongside any automation that has been implemented.

These reports can then be fed as enriched information into ticketing systems, such as ServiceNow, where they can be actioned or stored, as appropriate, to create a clear, trackable — and easily understood — auditable record of the incident and the required actions.

Inventory data processing and normalisation

Operators and CSPs may have multiple inventory systems because they are – an often unsung – element in maintaining efficient operations and equipment planning. Inventory systems both collect and expose data – as system status changes, as networks expand, as devices are shipped and activated, and so on.

It means that inventory systems are required to process many tasks that are linked in common workflows. For example, can fibre at 1Gbps be delivered to a certain address? The inventory system can be checked to see if dark fibre is already in place and how close to the building it passes. If it's there and already connected to the property, is there a suitable router available for shipment?

A new customer wants 1Gbps speed fibre at an address they've just moved into.

The problem here is that raw inventory data (for example, JSON from a graphDB) may not be in a format suitable for a system involved in the workflow, or which requests the data.

That's where an LLM comes in. Again, with the right training, it can convert different formats of data (and other kinds of input) into a standard format so that it can be more easily parsed and processed, without human intervention.

Such an LLM can do this automatically, acting as a bridge between different platforms – and, as We Are CORTEX has found in early trials, where there are multiple inventory systems, the requested information can be accessed and delivered from the relevant inventory platform, so it can be provided when required. In turn, this enhances existing automation flows – and accelerates data collection and presentation to the processes that consume it.

But LLMs can do more than simply convert data. They can check data formats for expected information and parameters, to ensure data consistency. Where gaps are found, these can be raised as alerts, forcing actions to take place – reconciliation outside of normal procedures, manual interventions, and so on. As a result, the overall accuracy of the inventory (which is foundational to operational performance) can also be enhanced through use of the LLM, as well as driving efficiency for workflows.

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Customer and partner email classification

The automated parsing of emails from customers is not a new concept or solution. Regex (regular expression) parsing has long been used and has considerable maturity. However, it cannot account for (human) sentiment in the same way that AI can.

LLMs have a clear role to play here, as vectors for enhancing the accuracy of email intent and sentiment – and for applying a classification so that emails can be handled more effectively. So, for example, with LLM-based processing, better inbound email triage can be applied and more actions automated, such as auto-replies to different requests that are more personalised and adapted to the tone required, or the escalation of email types that occur with particular frequencies from specific senders, and so on.

This is also applicable to cross-supplier communication. For example, in North America, one leading operator has a network of installers who build out fibre, connect properties to the network, and so on.

But these sub-contractors cannot connect to the operator's provisioning systems via APIs that can be integrated into the normal internal workflows with which they are involved. LLM parsing of email communication, however, enables this gap to be bridged, allowing partners to be integrated into automated flows. It brings legacy approaches into a more unified service delivery and operational framework.

LLMs in process flows - summary

Example	How it works	Customer Value
IR.21 Delta Parser	*LLM parses new/ old roaming IR.21 files and returns structured JSON of differences.*	*Simplifies partner onboarding and interconnect compliance.*
Alarm Root-Cause Summarizer	*AI summarizes syslog/ alarm data into human-readable fault cause.*	*Accelerate triage and reduces Mean Time to Repair (MTTR).*
ServiceNow Ticket Enhancer	*AI enriches incident descriptions with telemetry and email context.*	*Produces cleaner, more actionable tickets.*
Config Audit Translator	*LLM interprets CLI configs and maps them to compliance policy templates.*	*Speeds up configuration compliance checks.*
Inventory Data Normaliser	*LLM converts unstructured inventory exports into consistent JSON.*	*Improves data lake accuracy and reporting.*
Customer Email Classifier	*LLM categorises inbound customer emails and triggers the right CORTEX flow.*	*Enhances automation of customer support processes.*

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Lesson Two:

Process Co-Pilot

Human intervention and oversight are often required for critical points in process workflows, or when specific events occur. This requires vigilance and rapid response to requests or events, with human specialists typically required to parse complex event data, which may come from different systems or sources. In effect, the operator may have to check different systems before enabling the workflow to continue.

However, We Are CORTEX has introduced new AI chatbots — Process Co-Pilots — that perform the task of aggregating the necessary information for such critical paths in flows supported by the CORTEX platform. In the enhanced workspace, these chatbots can interact with live CORTEX flows in the production network (or in staging environments before service launch) and enable human users to ask questions about running events when required – accelerating discovery of the information required to make decisions about how the flow should proceed.

The intuitive interface automates the complexity of bringing information from different sources together, as the chatbot performs this task automatically.

For example, a user could ask information about the type of router being used during a security incident, and then be informed whether, for example, it's PE (Private Edge) or CE (Customer Edge). It means that that the issue can be isolated (core vs customer specific information) and resolved quickly.

Similarly, a request to understand specific SLA terms could be made when investigating a reported drop in QoS for a given service to a customer segment (for example, valuable B2B subscribers). This action could then trigger additional diagnostic flows, based on user inputs, while considering the overall context – such as, which other customers using the same service in different locations are affected by the issue.

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Process Co-Pilot - summary

Example	How it works	Customer Value
Network Change Impact Advisor	*Approver queries AI for 'who is impacted?' using process data context.*	*Adds dynamic risk awareness before executing changes.*
SLA Breach Explainer	*Co-pilot summarizes why an SLA or KPI breach coccured.*	*Improves customer communication and accountability.*
Governance Chat Assistant	*AI checks NIS2/policy compliance during approval, flagging gaps.*	*Ensures decisions remain policy-compliant and auditable.*
Root Cause Discussion Assistant	*Allows engineers to query AI about historical root causes of similar issues.*	*Improves decision-making during change approvals.*
Real-Time Data Context Provider	*Provides contextual insights from live network telemetry for the approval step.*	*Enables better informed operational decision-making.*
Knowledge-based Justification Generator	*Generates justification text for approvals referencing previous cases.*	*Saves time and maintains audit quality.*

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Lesson Three:

Design Co-Pilot

Domain expertise has always been part of building process flows. With We Are CORTEX, citizen development has always been integral to our philosophy — because SMEs can learn how to automate in their domain and then share that expertise with others, reducing learning curves, spreading knowledge and reusing flows and process fragments.

But AI provides the ability to build that expertise into the tools with which automations are created. So, for example, we can use bots to ask questions, parse existing developments and deployments used elsewhere in the organisation and by other teams, recommend next steps, solve problems, and more.

It means that Design Co-Pilots in the CORTEX platform can accelerate automation as they provide information and examples, and guide users to the next part of the workflow they are assembling. The more the system is used, the bigger the knowledge base becomes. CORTEX learns from existing automations and so is optimised to your existing network, based on what has already been implemented and the overall ambitions of your organisation.

It enables all users to share and contribute their respective kernels of knowledge. This expertise then becomes consolidated and is continually augmented as it's accessible to all, with citizen developers able to add their expertise and specific specialism at any point.

In addition, by measuring the success of each workflow, through relevant KPIs, accuracy and performance is enhanced and expanded over time, which reduces time to delivery and accelerates the transformation journey.

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Design Co-Pilot - summary

Example	How it works	Customer Value
Natural-Language Flow Builder	*Describe an automation goal and AI creates the BPMN flow outline.*	*Reduces design time and lowers the skill barrier.*
Auto-Documentation Assistant	*Generates clear documentation for finished flows and APIs used.*	*Saves documentation effort and supports audits.*
Reuse and Suggestion Engine	*Finds similar flows and recommend the reuse of logic or APIs.*	*Prevents duplication and ensures standardisation.*
Expression Validator	*Analyses C#, SQL, or PowerShell snippets for syntaz or logical errors.*	*Improves flow reliability and reduces testing efforts*
Data Structure Generator	*AI suggests optimal JSON structures for flow entities.*	*Speeds up data model creation for integrations.*
Flow Dependency Visualiser	*Maps flow interconnections and dependencies automatically.*	*Improves maintainability and impact assessment.*

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Lesson Four:

AI Agent Orchestration

As more and more tasks, workflows, and processes are enhanced with AI, the widespread adoption of Agentic interaction is inevitable. (Although it's important to note that many legacy platforms perform vital functions that simply can't be upgraded with AI capabilities. Operators must be aware that not everything can be upgraded to AI as they pursue their transformation strategies.)

In the cases where agentic AI is deployed, it means that the agent of one system might need to seek information from the agent of another system. In certain cases, these distinct agents may need to be able to communicate directly, not via classical APIs.

MCP or Model Context Protocol has become the standard method for enabling such communication, albeit that these developments remain in their infancy for now. How might this impact operations in practice? For example, a service management system (such as a Policy controller) that is integrated with automation from We Are CORTEX may need to obtain information from a billing platform or provisioning system.

Instead of a complex mix of API integrations, agents from the Policy control function will communicate directly to exchange the required information, so that, in turn, it can be processed by their respective platforms.

Here, CORTEX acts as a deterministic execution engine that is called by external AI agents. So, a self-service agent may call CORTEX to execute a specific task, such as changing configuration in a Cisco router via SSH or Telnet, while also updating the CMDB (Configuration Management Database). In essence, an agent requests CORTEX to perform a task, which is then processed with all the required actions, including follow ups.

The change may only be temporary, during a period of congestion (for example, more capacity is required here, because QoS has been disrupted), or to manage conditions dynamically for a network slice during its lifecycle.

But this can be extended and applied to much more complex scenarios. There may be multiple agents involved, each of which is triggered by a specific activity – an emerging security threat detected due to anomalous activities, for example.

In turn, this might require traffic to be isolated, systems to be updated with records of the event for auditing purposes, alerts sent to customers, and so on, according to organisational protocols and policies that define actions for different scenarios.

In such a case, multiple agents may interact with CORTEX, requesting actions to be taken – while CORTEX, in turn, interacts autonomously with other systems to fulfil them.

These orchestrations are emerging, following a piecemeal approach, as different vendors and solution providers launch new agentic capabilities. However, at We Are CORTEX, we have already worked with operator and integrator partners who are planning for multiple scenarios using agentic AI interaction.

As more AI agent solutions and capabilities are developed and released, many more cross-domain interactions will become possible. In time, this will drive the industry to Level 5 network automation.

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Agentic AI Orchestration - summary

Example	How it works	Customer Value
Security Auto-Remediation Team	*AI agent detects CISCO vulnerability and triggers CORTEX flow for validation and patching.*	*Autonomous, auditable vulnerability management.*
Customer Self-Service Agent	*Chatbot agent calls CORTEX APIs to check or reconfigure CPR.*	*Reduces operational load and improves user experience.*
Multi-Agent Diagnostic Workflow	*Agents (triage, network, vulnerability) delegate deterministic tasks to CORTEX.*	*Combines reasoning AI with deterministic orchestration safely.*
Predictive Maintenance Agent	*External agent predicts device failure and requests CORTEX to schedule replacement.*	*Prevents outages with proactive action.*
CloudOps Optimisation Agent	*AI agent monitors cloud workloads and triggers CORTEX scaling flows.*	*Optimises resource costs and performance.*
Service Assurance Orchestrator	*Agent integrates service insights from multiple OSS systems and invokes CORTEX remediation.*	*Delivers autonomous assurance operations.*

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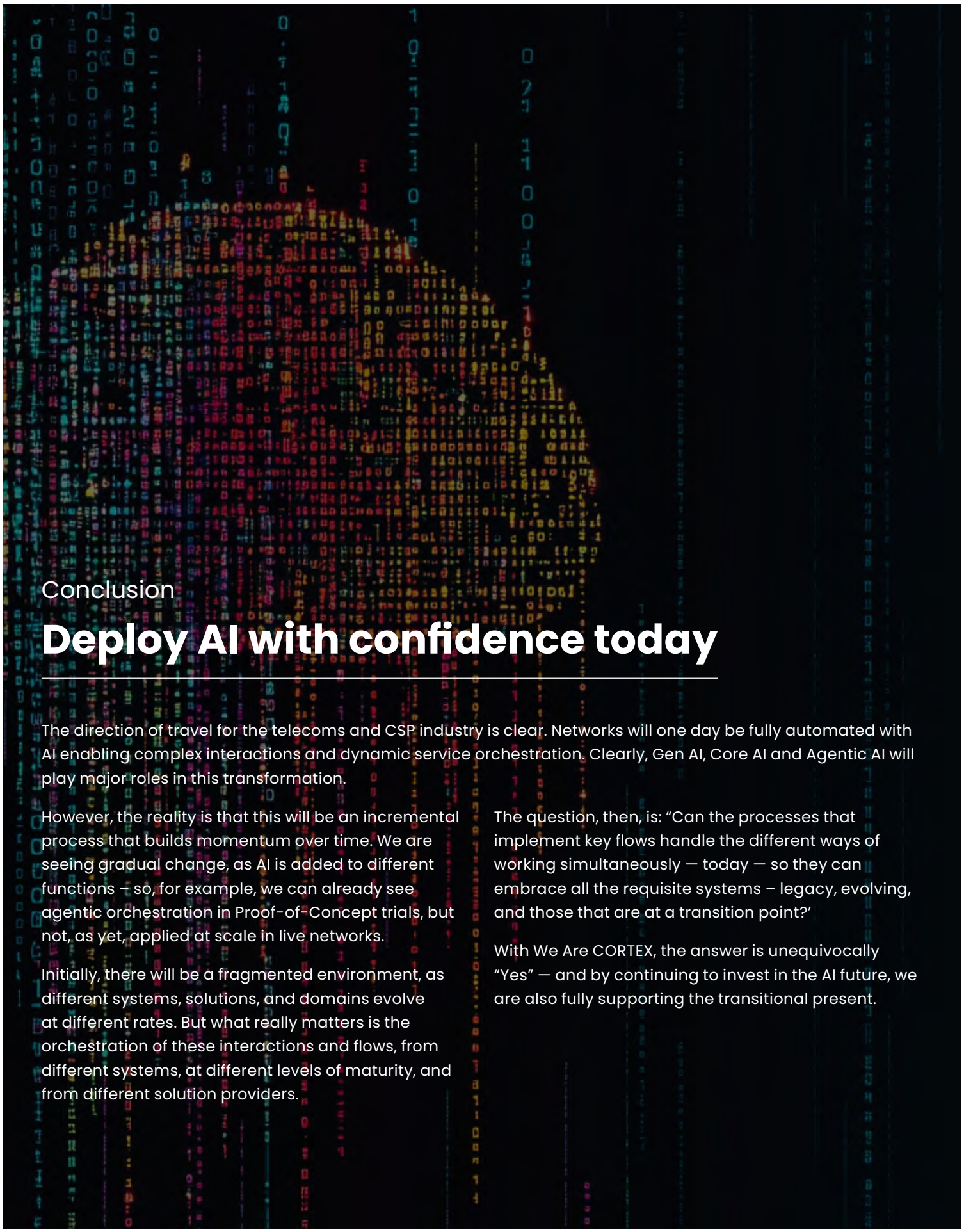

Conclusion

Deploy AI with confidence today

The direction of travel for the telecoms and CSP industry is clear. Networks will one day be fully automated with AI enabling complex interactions and dynamic service orchestration. Clearly, Gen AI, Core AI and Agentic AI will play major roles in this transformation.

However, the reality is that this will be an incremental process that builds momentum over time. We are seeing gradual change, as AI is added to different functions – so, for example, we can already see agentic orchestration in Proof-of-Concept trials, but not, as yet, applied at scale in live networks.

Initially, there will be a fragmented environment, as different systems, solutions, and domains evolve at different rates. But what really matters is the orchestration of these interactions and flows, from different systems, at different levels of maturity, and from different solution providers.

The question, then, is: "Can the processes that implement key flows handle the different ways of working simultaneously — today — so they can embrace all the requisite systems – legacy, evolving, and those that are at a transition point?'

With We Are CORTEX, the answer is unequivocally "Yes" — and by continuing to invest in the AI future, we are also fully supporting the transitional present.

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