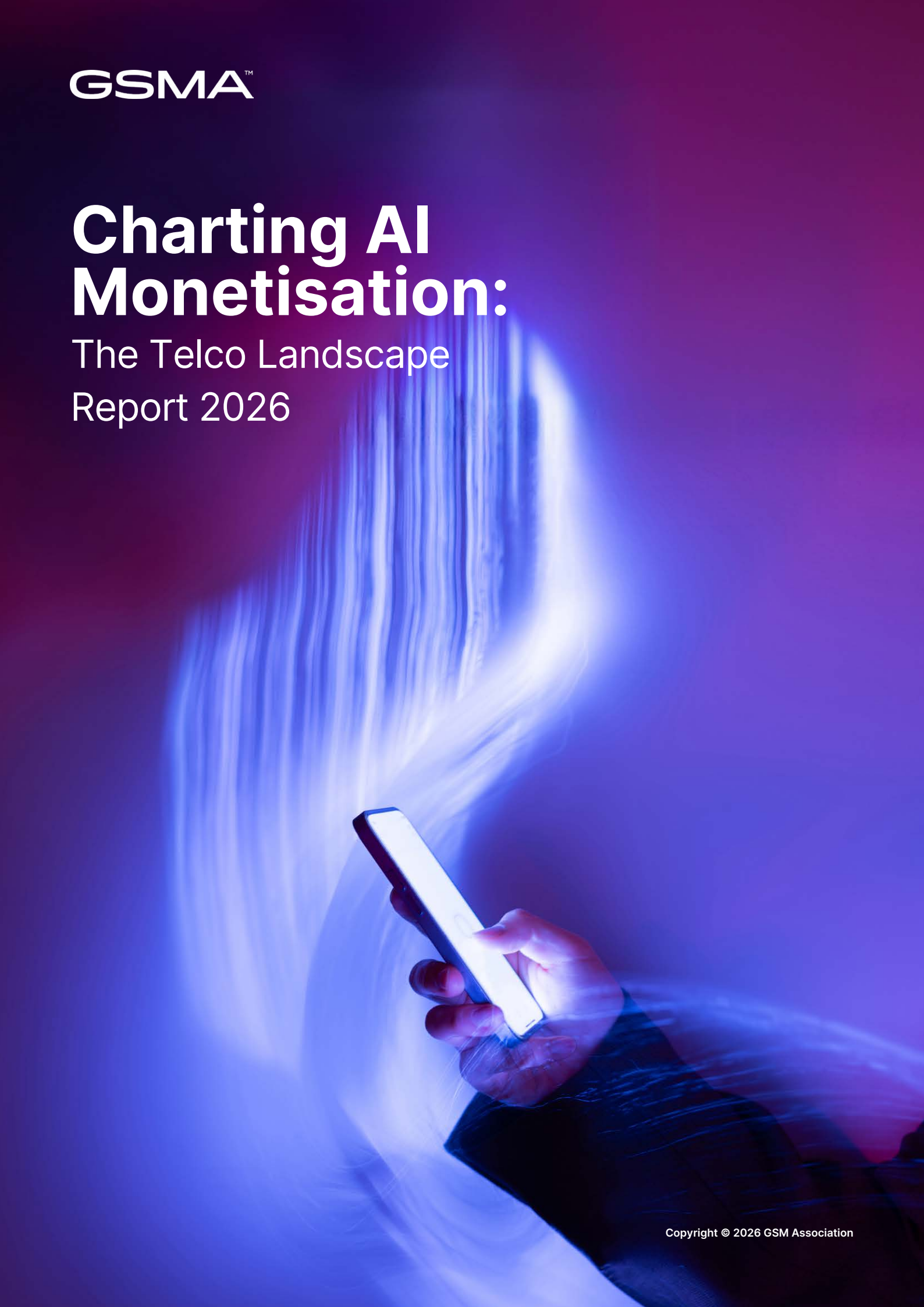
GSMA

Charting AI Monetisation:

The Telco Landscape Report 2026



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GSMA

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Contents

Executive summary

The telecoms industry has embraced artificial intelligence (AI), with its enthusiasm matched by growing investment levels. Although operators have deployed advanced machine-learning (ML) models to drive automation across their networks, the advent of generative AI (genAI) has left them playing catch-up. Providers of large language models (LLMs) are building and training AI models on increasingly sophisticated compute architectures. Operators are struggling to match these in terms of scale and global reach.

The telecoms industry's most pressing problem is a lack of growth. Operators are therefore looking to AI to help reverse the trend. They have a number of AI monetisation opportunities available to them. Some have framed investments in AI in terms of both cost-reduction and revenue-generation objectives. Some have initiated deployments and trials in various operator domains, particularly customer care, marketing and related support functions.

This report explores the potential revenue models for operators using AI in their product sets.

Pivoting to revenue generation

Most operator investments in AI have focused on incorporating the technology into the infrastructure and connectivity layer, with deployments in the network and data centre functions. Some operators have made investments in higher layer functions such as LLMs and orchestrators to help drive opportunities. However, the cost-reduction imperative has been

the priority in early LLM initiatives, with operators focusing on customer care and internal process improvements.

Operators need to go beyond areas such as energy efficiency in the RAN and automating core network processes, and pivot towards revenue generation. The latest trend for operator-deployed AI is using networks to drive AI adoption. Networks *for* AI is a relatively new concept, with network assets enabling AI for external stakeholders. An example here is the AI-RAN Alliance, which aims to use spare compute resources at RAN sites to handle the AI workloads of enterprises and third parties.

Addressing the prerequisites of monetisation

As operators have invested in AI, initial approaches have focused on the development of telecoms domain-specific LLMs. GenAI use cases have been built on these, primarily for business functions such as customer care. However, with the continued deployment and evolution of 5G networks, it will be increasingly relevant to embed AI across the network and into as many workloads as possible. Such initiatives must be deployed on programmable networks, where the network is flexible and scalable, and changes must be processed rapidly. To do this, the entire network architecture needs to become increasingly less siloed and more automated. This requires investments in unified data architectures to complement efforts made on the network side. Unified data architectures will make the deployment of telco-specific LLMs more meaningful, as the models will be able to make better inferences for queries. Operators will also need to address the issue of integration with the OSS/BSS stacks to achieve a true, end-to-end view.

Identifying the opportunities ahead

A number of avenues for monetisation of AI in the telco network have become clearer in 2025:

- business-to-consumer (B2C) opportunities, through dynamic pricing and AI for customer care
- business-to-business (B2B) opportunities, including GPU-as-a-service (GPUaaS), AI factories and inferencing at the edge
- data productisation, where operators package internal data to make it accessible to enterprise users
- ambitious efforts to build AI models that can create shared, foundational AI assets, or curated marketplaces that generate revenue through licensing, subscription fees and access charges.

1 AI in context and ecosystem readiness

1.1 Telco AI: easy wins give way to commercial offerings

AI has become a foundational technology reshaping industries, business models and competitive dynamics. It will dominate discourse for the rest of this decade and possibly beyond. The telecoms industry is no stranger to AI and its ML cousin. Telecoms operators have a long history with ML as they have sought to drive greater automation and management of their networks. The advent of genAI, driven by LLMs that are powered by massive new compute infrastructures, has changed the rules of the game.

The new AI paradigm has left operators playing catch-up. Despite this, there remain plenty of opportunities and work has already begun. AI has both a cost and revenue motivation for operators. These are not mutually exclusive for any industry, telecoms included, with the merits depending on the use case. Operator activity in 2024 and 2025 has largely focused on the cost-reduction imperative to help mitigate long-running margin pressures and take advantage of labour redistribution where formerly manual tasks can be automated.

The revenue-generating dimension to the use of AI in telecoms is starting to take shape. Around 15–20% of AI deployments from operators now have a revenue-generating focus on external stakeholders and customers. While this remains a minority (considering the bulk of activity continues to focus on automating customer-care functions and things like pre-emptive network maintenance), the balance is shifting to the external side. Q3 2025 announcements are a good forward indicator. Operators in several regions, particularly Asia Pacific (37%) and Europe (25%), are bringing AI into their businesses with a revenue objective. Indeed, for many operators, AI investments are increasingly seen as highly strategic.

Table 1 **Is AI focused on costs, revenues or both?**

Source: GSMA Intelligence

Region	AI deployments launched (cumulative)	Primary objective		New deployments (three months to September)	
		Internal (costs and efficiencies)	**External** (product revenue)	**Internal** (costs and efficiencies)	**External** (product revenue)
Europe	122	84%	16%	75%	25%
Asia Pacific	120	75%	25%	63%	37%
Latin America	57	91%	9%	–	–
Sub-Saharan Africa	52	94%	6%	92%	8%
MENA	46	83%	17%	79%	21%
Eurasia	21	81%	19%	50%	50%
Northern America	14	79%	21%	100%	0%

Data based on reporting from 700 telecoms operators worldwide as of September 2025.

1.2 The AI tech stack and the telco opportunity

The telecoms industry's most pressing problem is a lack of growth, with operators grappling with return on invested capital trending lower than weighted average cost of capital. Operators are therefore looking to AI to help reverse the trend.

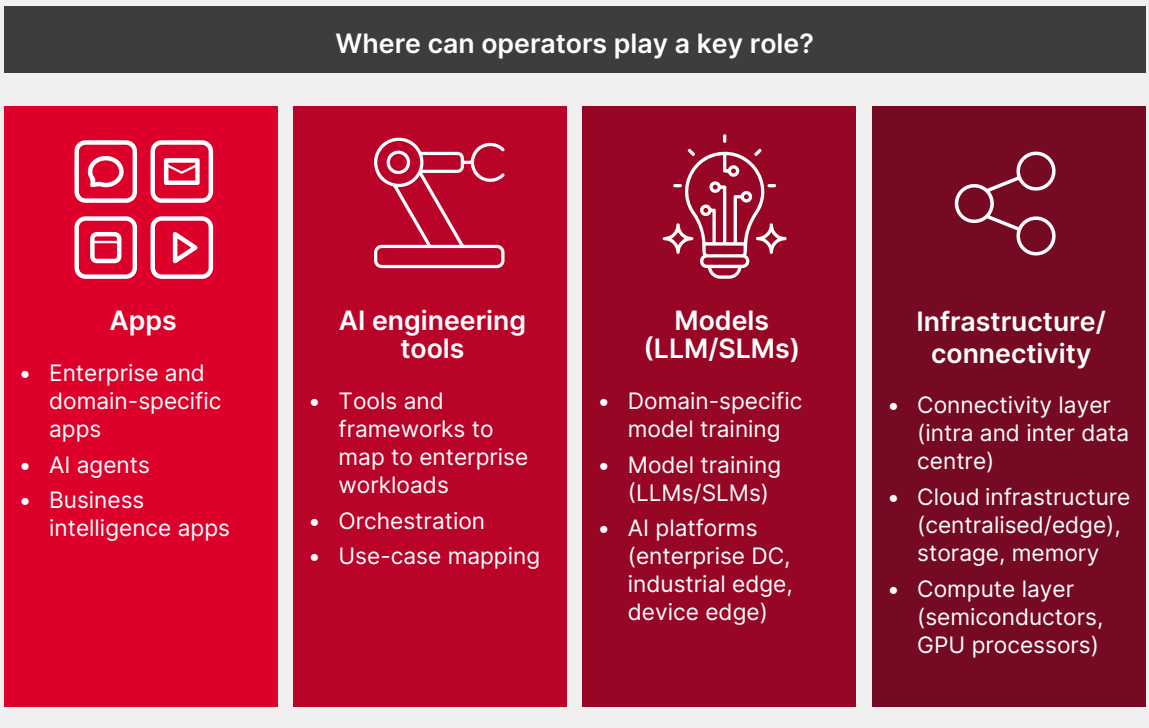
Before examining how operators should approach AI and its adoption, it is important to understand the AI tech stack and its layers, many of which overlap in practice. Figure 1 shows the principal elements of the AI tech stack.

- **Infrastructure.** This includes the core semiconductor solutions necessary for AI, with much of the attention centred on GPUs provided by the likes of Nvidia, which offer the compute resources necessary for intensive AI workloads
- **Models (LLMs/SLMs).** Players such as OpenAI and Anthropic have made significant investments in creating foundational LLMs that have become the default platform for a new generation of genAI use cases.
- **AI engineering tools.** The tools and frameworks made available to enterprises can be used to enable their AI workloads on top of AI infrastructure.
- **Apps.** This includes the apps being created for enterprises and specific verticals, as well as AI agents to help them drive internal efficiencies and connect with external stakeholders.

Operators are already making investments in AI – but most of their focus in terms of incorporating AI into product portfolios is currently on the infrastructure and connectivity layer. Operators are making investments in higher layer functions such as LLMs and orchestrators to help drive future opportunities, but the cost-reduction objective has been a priority in early initiatives.

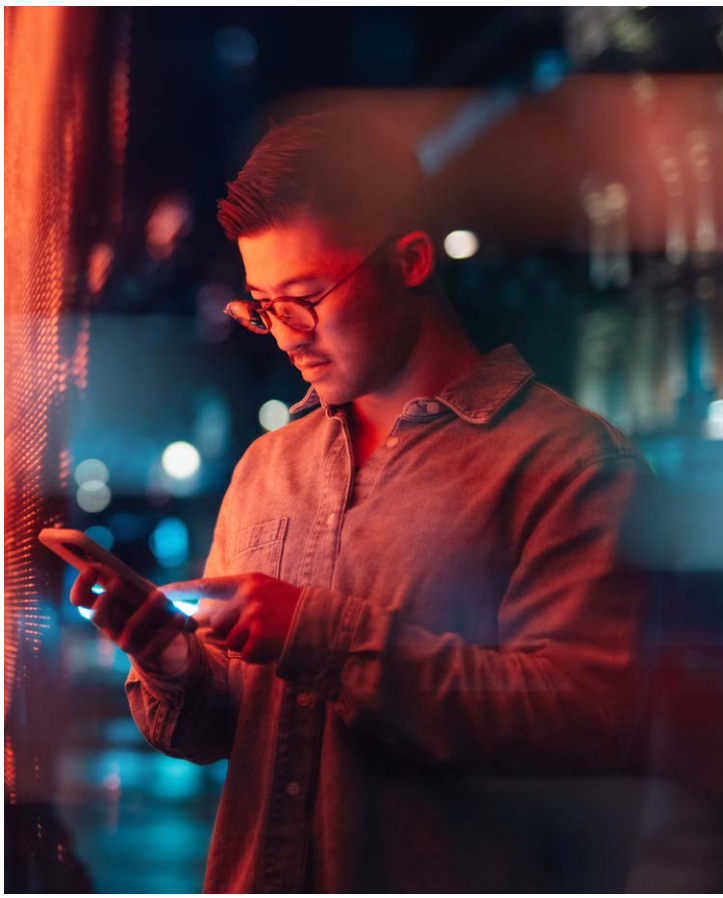
Figure 1 The AI tech stack

Source: GSMA Intelligence



1.3 The telecoms industry's level of AI adoption

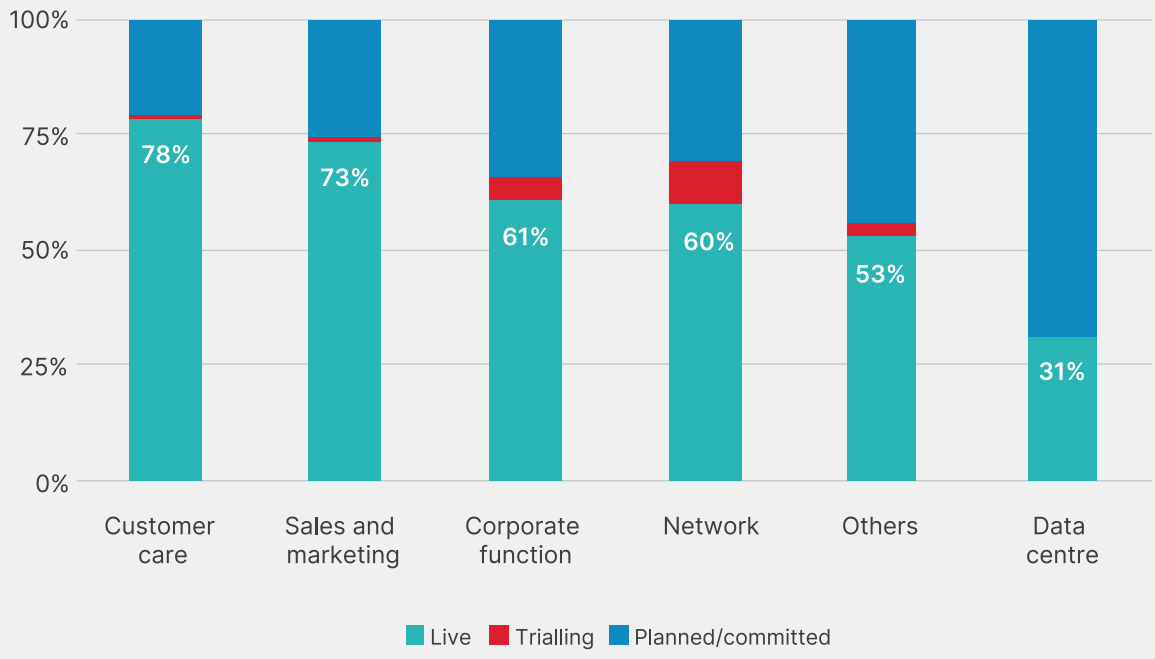
GSMA Intelligence data from AI deployments across 700 operators so far indicates that the customer care (mostly call centres) and network functions are more 'AI-ready' (see Figure 2). This is to be expected, as most AI activity in the network is designed according to internal objectives that target efficiencies through automation. Operators have been implementing AI across their networks in areas such as energy efficiency in the RAN and automation of core network processes.



The more interesting dimension from a competitive standpoint is operators using networks *for* AI – a relatively new concept. An example is the use of spare compute resources at RAN sites to handle the AI workloads of enterprises and third parties. Operators with the capabilities to use the network for AI will also draw on telco data centres and private cloud. This movement is still emerging; most AI activity in the telco data centre space remains in the trial or planning phases. However, these are likely to be hotbeds of activity over the next 12 months, with operators experimenting with a range of commercial go-to-market strategies.

Figure 2 Telco AI deployments are most evident in customer care (an easy win) but are expanding to other functions

Source: GSMA Intelligence



Data based on reporting from 700 telecoms operators worldwide as of September 2025

2 Avenues for monetisation and opportunities to collaborate

2.1 The prerequisites for revenue generation from AI

The biggest qualifying condition for any operator to be able to drive revenue from AI is that the underlying network needs to be programmable. In other words, the network must be flexible and scalable, and changes must be processed rapidly. To do this, the entire network architecture needs to become increasingly less siloed and more automated. As operators invest in AI, initial approaches have focused on the development of telecoms domain-specific LLMs. GenAI use cases have been built on these, primarily for business functions such as customer care. However, as the deployment and evolution of 5G networks continue, it will be increasingly relevant to embed AI across the network and into as many workloads as possible.

To achieve the goal of greater automation, the problem of data silos must be addressed. While most operators have made significant investments in data lakes, efforts have not necessarily translated into an ability to access data seamlessly from across the network.

Even where data pipelines have been built, there is the further challenge of cleaning the data to make it more accessible and consistently presented. Operators are increasingly looking at unified data architectures to complement efforts on the network side. Unified data architectures will make the deployment of telco-specific LLMs more meaningful, as the models will be able to make better inferences for queries. Operators will also need to address the issue of integration with the OSS/BSS stacks to achieve a true, end-to-end view.

A 5G network with a horizontal, end-to-end architecture that has AI embedded will be essential to quickly spin up new services and deliver on the network-as-a-service (NaaS) vision. This is true for consumer use cases but particularly so in catering to the diverse range of enterprise use cases across verticals. These B2B models will not be possible without a highly programmable and adaptable network.

2.2 Avenues for monetisation

B2C

Mobile operators have long followed a playbook for segmenting and targeting their customer base to drive spend. The traditional model has been based on socioeconomic modelling to help create pricing and packages. AI is now increasingly being deployed to analyse customer usage and traffic patterns to create richer profiles. These can help operators deliver hyper-personalised recommendations, promotions and add-ons. For example, Telefónica has deployed a personalisation engine based on its Aura cognitive platform to combine and analyse customer data across multiple channels. This helps drive improved interactions between agents and customers, spurring higher satisfaction levels. The aim is not just to boost ARPU, but to extend customer lifetime value through reduced churn. Specific B2C areas include the following:

- **The shift to dynamic pricing models**
  A significant change resulting from the use of AI is the move away from static pricing models and towards a dynamic pricing approach. AI can help operators parse large amounts of data to gain a 360-degree view of the customer and proactively match their preferences with prevailing network conditions and inventory levels. For example, China Mobile Group's Henan Company Limited (HCL), an operating company in Henan province, has trialled and deployed a new service to proactively identify 'VIP' customers in a packed stadium during a live event who face a degraded user experience due to network congestion. A real-time data feed can help the operator prompt the user with a top-up package to boost their experience beyond what they are already paying for. Similarly, if a prepaid user's call patterns suggest regular surges in data use resulting in early package expiry, AI algorithms can suggest an early top-up before data limits are reached, preserving the user experience and reducing friction. Dynamic pricing based on the hyper-personalised profiling of customers has shown significant results for operators while also making them better aligned with changing demographics and socioeconomic shifts. In the China Mobile example, HCL introduced three new tariff packages at the end of November 2024 to target 'high-end' users of the GoTone brand and drive additional revenues.

- **360-degree profiling of customers**
  The greater automation that can result from embedding AI into BSS/OSS can help reduce manual effort and improve operators' ability to respond promptly to customers. With near-real-time and 360-degree profiling of customers, operators can better understand customer context. This is essential to sifting and navigating through increasingly large and complex product and service portfolios.

- **AI for customer care**
  Operators are deploying AI for customer-service use cases beyond collecting data for better profiling. An early application is the development of AI-enabled chatbots trained to answer questions related to billing, tariff packages, bundles and services. For example, Vodafone has launched its TOBi chatbot across 11 of its markets. Meanwhile, in South Korea, SK Telekom has gone beyond the chatbot use case to launch a new AI personal assistant app called A. (A-dot). This has evolved from early versions to leverage SK Telecom's internally developed LLM, which taps into other models and services including Anthropic's Claude, ChatGPT and Perplexity. The app can be used for calendar tasks, to-do lists and queries.

"AI is now increasingly being deployed to analyse customer usage and traffic patterns to create richer profiles. This helps drive improved interactions between agents and customers"

B2B and infrastructure enablement

In recent years, as the core consumer business has slowed, operators have shifted focus to the B2B segment as part of a diversification strategy. Several operators have already seen success with enterprise solutions that go beyond connectivity, managed bundles and private 5G.

AI offers operators the opportunity to add value to enterprise customers. Enterprises around the world are evaluating how AI can turbo-charge their businesses and drive value. Enterprises face challenges with respect to the trade-off between the costs of deploying AI (not just for the solutions but also cloud egress costs) and preserving the privacy and security of their proprietary data. In some cases, hyperscaler public cloud solutions will work, but in many scenarios enterprises will have requirements for compute to be distributed and closer to the end user. This offers opportunities for operators.

Operators have unique assets that can help them leverage AI to offer hybrid solutions to enterprises. Their biggest asset is their data centres – both centralised and edge compute. These can be leveraged for enterprise services. Specific B2B areas include the following:

- **GPUaaS**
  A basic monetisation model is to offer GPU as a service (GPUaaS), where the operator deploys AI infrastructure and GPUs (from Nvidia, Intel, AMD and others) and then leases the compute capacity to enterprises. This model seeks to offer compute resources to enterprises unable to address their requirements through public cloud and emerging AI data centre providers.

- **AI factories**
  Operators can deploy AI models centrally at operator data centres to serve as AI factories. These can help enterprises run AI workloads in a secure environment with a trusted partner. Many enterprises, especially those weighing up data localisation and privacy considerations, can meet their compliance requirements by tapping into operator AI factories.

- **Inferencing at the edge**
  Operators can also leverage their distributed network assets to add compute so AI can run on edge computing sites. This is particularly relevant for enterprise workloads that need AI inferencing performed as close to the enterprise premises and end-user devices as possible. This is becoming increasingly relevant for niche verticals that require domain-specific AI models. Many of these work on SLMs, which help with inferencing close to the edge of the network. Operators can offer solutions that combine AI infrastructure and analytics with highly secure and customised private 5G solutions, which ensure low-latency connectivity.

Other paths are available for operators looking to monetise AI with B2B customers. One potential area is fraud prevention. Operators already offer a range of services to enterprises, but with AI deployed and an increasingly open network capable of serving up APIs for location and more, enterprises in verticals such as finance, banking and insurance can tap into a proactive and predictive fraud prevention service. Examples here include Telefónica using its Kernel 2.0 platform to detect SIM swap and subscription fraud, and Vodafone Idea in India launching Vi Protect to identify spam calls and predict fraud.

Operators are also positioning themselves to address demand for sovereign AI infrastructure, compute and tools. This is emerging from enterprises with strict regulatory or national security requirements for data localisation and security. This was discussed in detail in the GSMA Intelligence research on distributed inferencing.

Data productisation

One of the largest assets operators have – and one that is unique to them – is their customer data. This includes call detail records (CDRs), call duration, data traffic volume and location information. Despite several attempts by operators, this has yet to be converted into meaningful revenue streams.

A key requirement with monetising data is the need to comply with regulations concerning user privacy and confidentiality. Unlike internet and software-as-a-service players (who often offer products that are free or based on a freemium model), operators cannot always explicitly ask their users to opt in to data collection due to the prevailing regulations governing their industry. Moreover, the customer data comes from a variety of domains across the network. Parsing, cleaning and packaging this data into a consumable format for enterprises is an arduous task.

Operators can deploy AI solutions that collect and analyse data streams from multiple parts of the network. Most network data comes from different, often siloed, domains. The net result is that the data cannot easily be shared across domains. The cleanup can be tedious, but AI can help with automation. Beyond aggregating data from multiple domains (internal and external), AI can anonymise the data and present it in useable formats.

The data, prepared and curated by AI, can be packaged into datasets that can be sold to enterprise customers. For example, in the UAE, e& Enterprise has created an AI-survey app called EngageX, which helps enterprises and government agencies collect feedback and insights. It includes the automation of survey questions, response collection and analysis to generate actionable insights.

Elsewhere, retail players such as shopping outlets can benefit from visitor mobility and location data at different times of the day to see where users tend to gravitate to, and where there are congestion points to be addressed. Although the data would have to be anonymised and scrubbed so as to not violate privacy considerations, it can help with resource planning and asset allocation.

Platform and ecosystem models

Operators are already investing in and experimenting with AI monetisation opportunities. The most ambitious approach is to build AI models that can create shared, foundational AI assets, or curated marketplaces that generate revenue through licensing, subscription fees and access charges. The concept revolves around creating more than the base computational infrastructure, to build models, tools and marketplaces that tap into the foundational compute layer but add much more value to developers. Another option is for operators to use their significant distribution reach and ability to act as a channel partner for enterprise-focused vendors and service providers. Operators have a history of leveraging their distribution strength for both B2C and B2B deals. The latter have typically revolved around partnerships with players such as AWS and Microsoft for public cloud services, or security solutions from the likes of Fortinet.

Operators are already making moves in this direction. Telcos including SK Telecom have been developing their own LLMs and building AI infrastructure through partnerships with OpenAI, Anthropic and others. Indosat Ooredoo in Indonesia has partnered with Nvidia to develop a sovereign AI factory in Indonesia that will leverage Sahabat.ai – Indosat's foundational LLM for the Bahasa language. Indosat is working with partners including Accenture and Hippocratic AI to develop use cases for sectors such as healthcare. Telefónica has developed Kernel 2.0, which seeks to embed LLMs/SLMs into internal workflows while also managing the open APIs for developer access.

Some operators are also working on the premise that AI initiatives need to scale globally. These have entered into strategic collaborations such as the Global Telco AI Alliance (GTAA), which includes SK Telecom, e&, Deutsche Telekom, Singtel and SoftBank. It is focused on developing a multilingual, domain-specific LLM. The domain-specific aspect is key to this vision, as telecoms is a unique vertical with specialised knowledge. An LLM tuned to the telecoms vertical will be more effective than an LLM with a multitude of general parameters and broader knowledge.

While it is too early to evaluate the GTAA, the new alliance and its target of a telco-specific LLM is a worthy, if highly capital-intensive, effort. Even if it can be built as a subset of broader general AI initiatives such as OpenAI and Anthropic, a telco-specific LLM would represent a significant effort. It would have to be trained on multiple networks across several countries and geographies. Such an LLM could be utilised to drive internal efficiency projects in operators but also for an external audience. External customers could be other operators choosing not to invest in developing their own models for cost or other reasons. If they were to choose this LLM to build their internal use cases and AI agents, the GTAA could generate revenues through licensing and other monetisation opportunities.

"The most ambitious approach is to build AI models that can create shared, foundational AI assets, or curated marketplaces that generate revenue"

2.3 Opportunities for collaboration

Almost all the monetisation avenues outlined above will require partnerships, if not broader industry collaboration:

- **Telco-focused partnerships**
  The most basic engagement for operators will come with vendors who supply the solutions for AI-enabled automation and orchestration of internal network workloads and processes. If AIOps is the key objective, operators will need to engage with vendors for each network domain but also encourage them to work with each other to enable interoperability and end-to-end visibility. A recent example is the partnership announced between Circles.Life in Singapore and OpenAI to develop a "fully AI-native SaaS platform" designed to enhance the telco customer experience.

- **B2C**
  Operators are exploring partnership models to enhance their B2C offerings, improving customer satisfaction and reducing churn. For example, several have entered into partnership with Perplexity, bundling the service to customers. A recent deployment is from Bharti Airtel in India, offering Perplexity Pro to its customer base of more than 400 million for a year. Meanwhile, SK Telekom has partnered with OpenAI to offer ChatGPT to its customers.

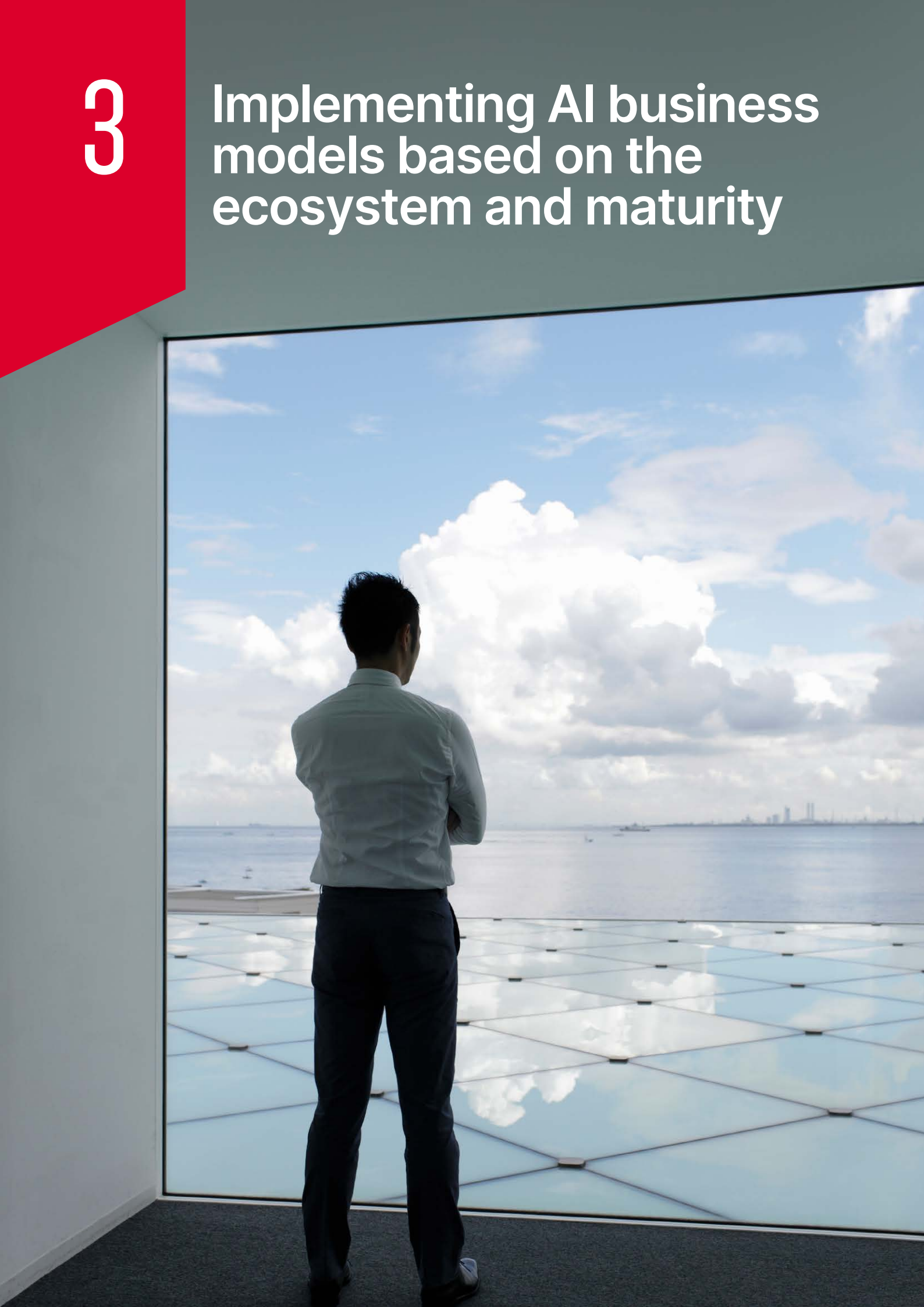
- **B2B**
  New services for enterprises include combinations of AI and private 5G. This requires a highly collaborative approach where the operator must act essentially like a systems integrator, pulling in devices, edge computing, digital twins, routers and wireless equipment to enable the use cases identified by enterprises. Operators will need to collaborate and partner with computing infrastructure and hardware vendors for edge computing, and other solution providers for products such as digital twins and security firewalls.

- **Infrastructure enablement**
  A much deeper level of engagement will come from operators looking to deploy AI infrastructure and making this available to end users for workloads. Such initiatives will require collaborative engagements with semiconductor and compute hardware providers including the likes of Nvidia and HPE. A recent example is Indosat Ooredoo partnering with Nvidia on AI factory initiatives. Operators will also need to engage closely with the broader developer community on the creation and maintenance of network APIs. These can expose functionality to enable new applications and services for enterprises.

- **Data productisation**
  Operators are exploring ways to use AI to create products that leverage telco and enterprise data and make it useful to enterprises. While using internal data that operators have on consumers can be challenging, there are more opportunities in the B2B segment. SK Telekom has expanded its A-dot app to the B2B segment; it aims to become the default personal assistant for business users while tapping into an array of multi-LLM agents from the likes of Perplexity, ChatGPT 3.5 Turbo and Claude Sonnet. Deutsche Telekom in Germany has launched its Magenta service with a suite of business-focused solutions. One is based on generating AI-based business intelligence for B2B customers.

- **Ecosystem models**
  This is a relatively new area where operators are exploring partnerships. Ecosystem partners can help operators build foundational technologies, potentially at the semiconductor level, as well as foundational LLM and toolsets. Emerging areas of tie-ups include partners with domain and vertical-specific expertise. Indosat's partnerships with Accenture and Hippocratic AI are examples of a budding ecosystem that can extend apps and services to industry verticals.

3 Implementing AI business models based on the ecosystem and maturity



Having outlined the main monetisation avenues, the following section introduces a high-level maturity lens to help operators contextualise which opportunities are feasible at different stages.

The global landscape for AI investments and deployments by mobile operators is varied and reflects different stages of maturity. While there is no shortage of potential opportunities from AI, capacity and maturity (measured in both financial and network architectural terms) will impact the business models that can be put in place to drive new revenue streams. Figure 3 presents a framework for assessing AI maturity levels.

Figure 3 AI maturity model for operators

Source: GSMA Intelligence

Level 1	Level 2	Level 3	Level 4
Foundation and awareness building • Use-case identification • Internal education of potential benefits • R&D efforts	**Exploration and early adoption** • Use cases prioritised and mapped out • Early PoCs/trials • LLM strategy outline • Mapping of AI to internal functions	**Integration and operationalisation** • Deployment of domain-specific LLMs with genAI applications for internal use cases, including network optimisation • Agentic AI beginnings	**Transformation and innovation** • Sovereign AI clouds • AI Factories + GPUaaS • Increasing B2B services • Intelligent network services for AI workloads

3.1 Level 1 – Foundation and awareness building

- Operators at this stage of maturity have just started the process of identifying potential use cases for AI – typically the low-hanging fruit. They are likely to focus on internal efficiencies, with investments in contact centres and broader customer-experience solutions.
- Leadership teams, especially at the executive and board levels, are sold on the potential benefits of AI, and operators have begun to raise awareness levels about AI across their internal teams. They have started to audit and think through new use cases, and the ability to implement AI to improve internal workloads and processes.
- At this stage, operators may also begin to invest in and conduct AI R&D efforts. Several operators have already started work to build LLMs for their own operations, and cater to local language requirements in their respective markets. In Asia, SK Telecom, Indosat Ooredoo and Reliance Jio are examples of operators investing in R&D and a host of other initiatives that have seen them achieve greater AI maturity levels.

Monetisation opportunities

At this maturity level, AI monetisation opportunities will come from internal efficiency initiatives. The single biggest investment required for operators is to implement a centralised data lake that can ingest regular streams of data from diverse sources including the core network, OSS/BSS, probes and RAN. Operators have already invested in ML models trained on historical operator data such as call and fault logs, performance metrics and network congestion data. More network data will be important to reach a minimal baseline that can drive internal efficiency programmes.

Early monetisation efforts will be focused on the cost-reduction imperative and come through use cases extending beyond analysis of subscriber calling, usage and traffic patterns. Examples of quick wins for operators come from areas such as fraud detection, or identifying billing discrepancies or sudden changes. In customer care, adoption of smart chatbots trained on advanced models can start to reduce call volumes and workload for customer-care agents, producing tangible cost savings and returns on investment.

3.2 Level 2 – Exploration and early adoption

- At this stage of AI maturity, operators have completed their early audits, identified use cases and driven internal awareness. Early efforts to build their own telco-specific LLMs have also progressed. The sophistication of these models is seeing some tangible results. In some cases, operators are looking at SLMs to drive greater domain-specific knowledge that can then underpin AI agents handling workloads.
- Operators have already created proof of concepts and trials to test new capabilities and gauge the efficacy of use cases, with many starting organically across internal business and technical groups.
- Operators at this level of AI maturity have developed base-level LLMs. Using these, operators will start thinking about how to modify or even redesign their internal workloads and processes with AI. While the majority of use cases for the LLMs are internal in the early stages, operators with LLMs will also be considering whether they can be used for external audiences and if they can charge for this. Operators will start to think about AI infrastructure and planning for these deployments as part of a larger strategic roadmap.

Monetisation opportunities

This stage continues on from the foundational stage of AI maturity. Many of the early initiatives have started to take hold. The increasing traction of AI is being noticed within the broader organisation, and more use cases will emerge. Beyond this, operators will see AI layered in at both the domain and holistic levels. AI at the domain level is implemented by vendors in that specific domain; there has been significant progress on automation of processes and workloads. However, the missing piece is a horizontal orchestration layer to ensure end-to-end automation.

At this stage, operators will begin to think about a common data architecture that cuts across their network and aids the collection and analysis of the massive data streams coming from all domains. This means deploying data lakes but also building the data pipelines to gather end-to-end data from the network. The intelligence can then be used to create hyper-personal services and experiences for customers, as opposed to the traditional segmentation and marketing approaches. Investments must be made at this stage to upgrade existing OSS/BSS. Early efforts will also be made to collaborate with external/third parties to explore marketing promotions and tie-ins for the personalised services offered to customers.

A key element of this stage is the increased investment by operators in advanced AI infrastructure. This involves the build of new compute resources in operator-owned data centres with semiconductor technology from the likes of Nvidia and AMD. The deployed GPU compute layer will act as a key foundational layer for advanced AI models that can be trained first on internal use cases and then repurposed for external applications to be monetised.

3.3 Level 3 – Integration and operationalisation

- At this level of AI maturity, AI initiatives from operators are well underway and moving beyond trials towards commercial deployment. The biggest change at this level of maturity is the deployment and operationalisation of an LLM that is both telco- and domain-specific, with a high degree of training and sophistication. This level of LLM is crucial for the emerging class of genAI apps that operators are considering for improved operational efficiency. The use cases will cut across customer-care functions, sales and marketing, network and engineering teams, and field technicians.
- Operators at this stage of AI maturity are transitioning away from core connectivity for mass-market solutions towards highly customised solutions for consumers and enterprises.
- This maturity level sees the beginning of agentic AI in the mobile operator domain. This represents the evolution of AI implementation beyond the initial genAI applications and use cases. Agentic AI will radically transform internal functions on the business side for customer care and sales & marketing. AI agents will also be critical for network optimisation, as the network teams set business and technical intents to plan the allocation of network resources in response to current and predicted network conditions.

Monetisation opportunities

Operators are much better positioned at this stage of maturity to leverage AI for monetisation and new revenue streams. The biggest changes will come from the availability and increasing sophistication of AI infrastructure and, critically, advanced network architectures that create the right foundations for rapid and flexible service deployments.

This transition from telco to 'tech-co' could manifest in the form of real-time uplink boosts to enhance the experience for users in congested areas. In other cases, it could take the form of network-as-a-service (NaaS) models, where enterprises can tap into low-latency, mission-critical connectivity through private 5G combined with edge computing. Operators will be able to offer dynamic network slicing, which can be spun up rapidly to respond to emerging network conditions or as part of network resource planning for high-traffic, scheduled events. For example, Orange in France deployed a private network on its 5G standalone infrastructure for the Paris Olympics. This was highly optimised for uplink traffic in anticipation of users sharing video content. Services can easily be productised and sold as add-on bundles to consumers to drive a boost in ARPU.

Operators at this stage will also see the signs of monetisation opportunities with their AI infrastructure investments. This will translate into potential GPUaaS partnerships, which will become increasingly relevant within specific country borders to satisfy sovereign AI requirements, but also for global enterprises needing to tap into additional compute resources for specific workloads. Operator investments in AI factories will also start to take shape, with LLM and SLMs available for enterprise customers requiring resources for inferencing.

3.4 Level 4 – Transformation and innovation

- Operators at this AI maturity level have made significant investments in AI infrastructure, solutions, tools and frameworks to help transition away from pure connectivity providers and move towards a platform play. The first measurable way is through the achievement of closed-loop AI and autonomous operations (i.e. AIOps across the network and operations). Beyond this, the network infrastructure will be programmable, allowing third parties such as developers to tap into network APIs on demand, and systems integrators to tap into network and connectivity resources for enterprise customers.

- Operator investments in building sovereign AI clouds will now take shape. Large data centres with advanced GPU compute solutions combined with operator and third-party-developed LLMs will boost the digital ambitions of nations. Beyond compute, significant investments will also be made to store and process the data locally. At this AI maturity level, operators will go well beyond the GPUaaS model towards AI factories, which offer more than the baseline level of compute to enterprise customers.

- Operators will see increasing traction with enterprises. The nature of these engagements will shift from traditional connectivity-focused solutions to customised, on-demand products and services. These will cater to diverse industry verticals with varying requirements. A network architecture optimised for AI will also see a large de-layering of the existing architecture towards a much simpler technology stack that is highly flexible and scalable.

Monetisation opportunities

In this advanced AI maturity stage, operators are in a position to drive multiple new revenue streams by leveraging their infrastructure and solution investments. The tech-co vision that has been espoused for several years will be put into practice through a platform model. The biggest benefit to operators will come from their ability to be a key part of customers' digital initiatives by leveraging existing assets and deploying new AI infrastructure.

Operator AI factory initiatives will see significant monetisation opportunities in the form of licensing fees and recurring revenues for data and model access. Operators can also leverage their significant data assets, utilising genAI to identify, collect and distribute network behaviour insights or aggregated traffic models as external data products for third parties.

New use cases and applications such as AR/VR, autonomous driving and low-altitude devices (drones, HAPS) can also be serviced by using a combination of advanced network connectivity and AI analytics. For example, operators can provide near-edge compute resources through the AI-RAN initiative, making edge compute resources available for low-latency inferencing for applications such as autonomous driving and drones. Operators can also provide the foundational connectivity layer for smart-city applications and smart transport initiatives that rely on low-latency, high-availability connectivity solutions, overlaid with AI to enable new use cases. Massive IoT will offer monetisation opportunities too. Operators can leverage their 5G-Advanced networks with AI capabilities to support and manage high-volume deployments of IoT modules and sensors.

4 The way ahead

The scale and breadth of opportunities that AI deployments can provide to the telecoms industry are significant. There are already learnings and takeaways from early AI initiatives and trials among operators that can help identify the way forward.

Look to leverage USPs in infrastructure

Operators can look to leverage the significant assets and USP they have in infrastructure. Verizon, SKT, e&, Vodafone and a host of others are offering GPU-driven models to enterprise customers that leverage GPU processors but ultimately rely on the capabilities of network operators. This means a differentiated strategy that relies on providing edge compute and telco private data centres to help reduce the compute latency inherent in heavy AI workloads.

Operators can take advantage of their national presence to position themselves as providers of sovereign AI. This is especially relevant at a time when geopolitical and sovereignty considerations are pushing governments to require that data stays in the country where it was generated and uses local technology and infrastructure. This is a key differentiator for operators versus AWS, Google and other hyperscalers.

Consider partnerships as essential

Operators cannot go it alone; they lack the scale and requisite capital spending abilities to compete with the large hyperscaler players investing in AI. To overcome these challenges, partnerships with a mix of technology and business partners are essential. KT's deal with Microsoft in 2024 is a good example, with KT using Azure cloud resources to help drive GPUaaS workloads for enterprise buyers in South Korea. This will offer hybrid cloud/edge capabilities that would not be possible without Microsoft's data centre scale. In a different context, Orange's partnerships with Meta and OpenAI to supply call-centre data in non-English languages combine data from massive OSS/BSS infrastructure with LLM scale.

Table 2 provides examples of the kinds of partnerships operators have already struck focused on AI.

Table 2 **Telco AI partnerships give a flavour for how best to leverage USPs**

Source: GSMA Intelligence

Date of	Operator	AI provider	Investment	Geographic coverage	Revenue model
October 2024	Vodafone	Google	$1 billion over 10 years	Europe, Africa	B2C (Pixel distribution, pay-TV upsell, security)
September 2024	KT	Microsoft	'Multi-billion dollar', including $450 million fee to KT for access to KT cloud	South Korea	B2B (LLMs for core business and enterprise services)
September 2023	KDDI	AWS	Not reported	Japan	B2B (LLM and app support for enterprise, government)
November 2024	Orange	Meta, Open AI	Not reported	Europe, Africa	B2B (language translation for customer care), non-profit

Integrating value measurement into future planning

As operators expand their AI ambitions, an important consideration will be how to evaluate the full impact of these investments. While monetisation opportunities are a central focus of this report, AI's value extends well beyond financial metrics. This aligns with earlier GSMA Intelligence work on holistic RoI, outlined in the Telco AI: State of the Market Q4 2024 report, which highlights the need to evaluate AI investments across financial and non-financial dimensions[1]. AI drives system-wide change across operations, people, skills, decision-making and governance, and many of these benefits

1 https://www.gsmaintelligence.com/research/telco-ai-state-of-the-market-q4-2024

unfold over longer time horizons. Traditional ROI metrics capture only part of the picture. Looking ahead, operators will need to take a more holistic view that balances financial outcomes with wider indicators of transformation, including productivity gains, improved service quality, enhanced workforce capabilities and responsible AI practices. This broader lens will be essential to ensuring that AI strategies remain sustainable, aligned with corporate priorities and reflective of the true scale of impact across the organisation.

Focus on building a sustainable and long-term strategy for AI

We remain at the beginning of the AI revolution. Operators must gear up with sustainable and long-term strategies to leverage the opportunities from AI. For example, Vodafone signed a partnership with Google that covers AI support in the Vodafone product set over 10 years. This reflects that AI represents a paradigm shift in computing that will play out as a series of 'cycles within a cycle' requiring long-term RoI planning.

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