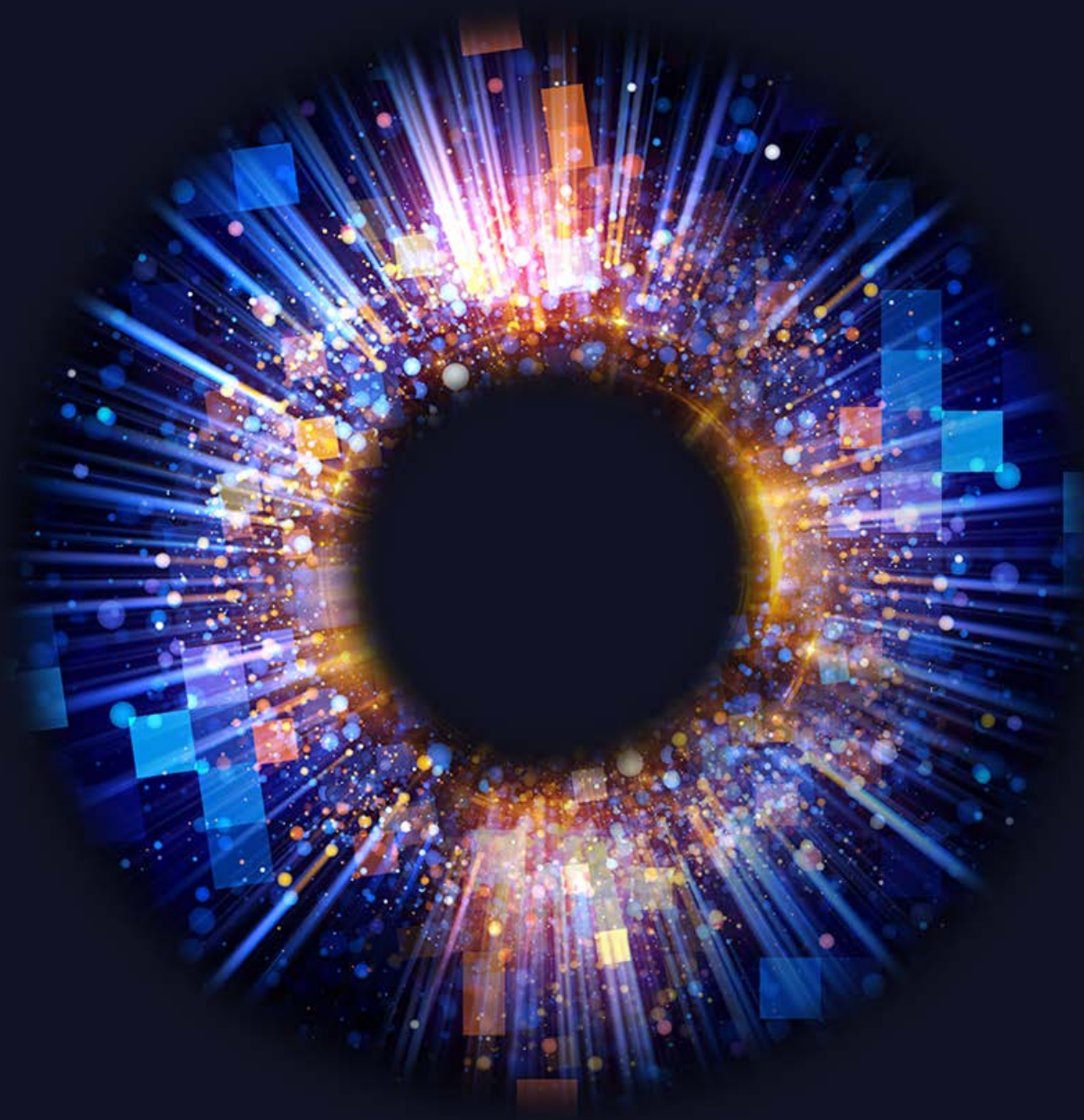




# Micro-augmentation: The future of knowledge workers in AI-native telcos



# What is micro-augmentation?

Telcos have always been innovators. Today, however, the industry finds itself challenged by rising costs, erosion of pricing power and operational complexity. All act as barriers to innovation.

AI offers a way out of this impasse, creating opportunities to increase productivity, streamline operations and build new revenue streams. Under these conditions, telcos will be able to create the headroom required to invest in innovation.

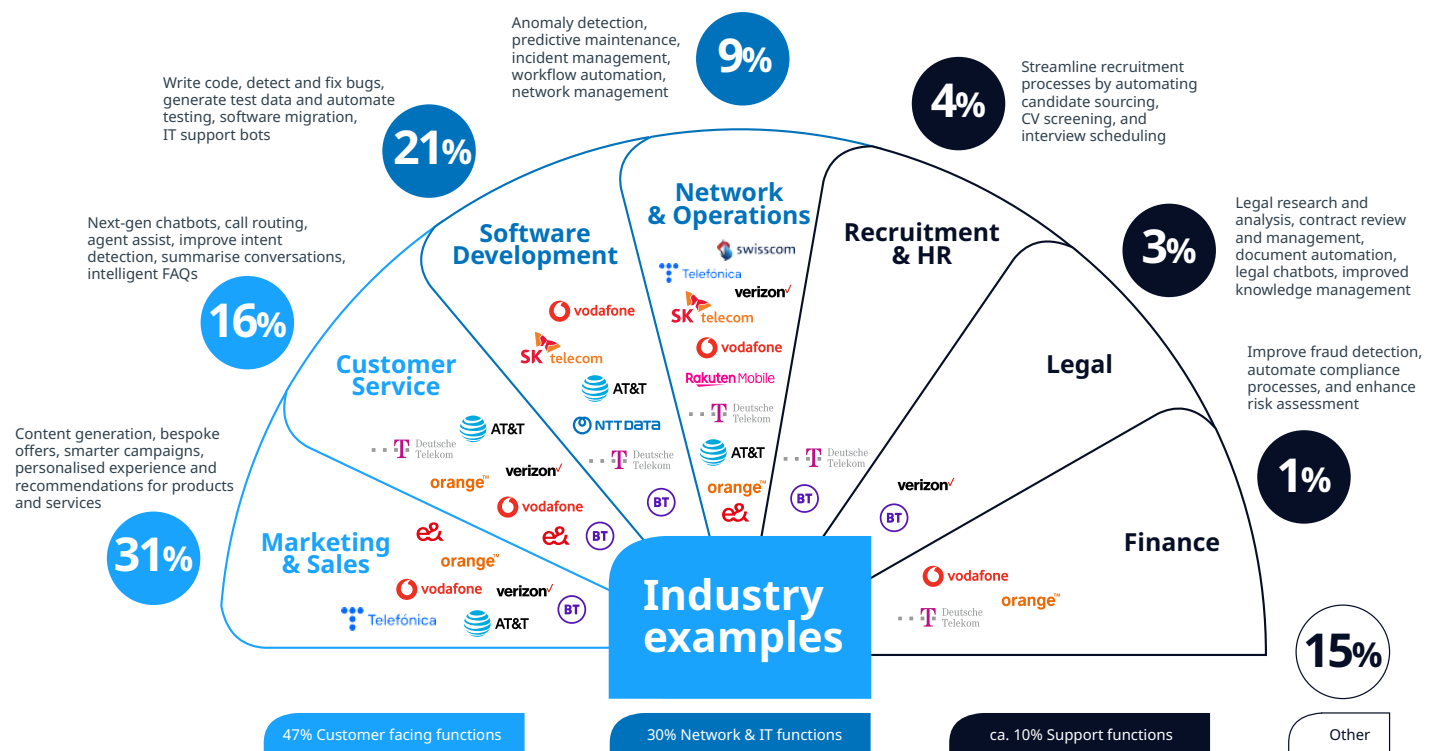
Success requires significant effort. Legacy systems and infrastructure must be modernised to liberate data from costly, rigid, silos. Managers and employees need to move beyond generalised analysis of challenges to fully

redesign business processes. In addition, substantial attention needs to be paid to the challenging shift from proof-of-concept to production at scale.

Most of all, however, successful AI projects involve understanding the art of the possible. Machine learning and Large Language Models (LLMs) are not reasoning engines capable of directly replacing human cognition. In fact, they excel at one job: pattern recognition, or the ability to categorise – and then predict – changes in pixels, sound waves, numbers or words. As a [recent survey](#) of AI engineers by the RAND Corporation demonstrated, the leading causes of AI project failure include misunderstanding challenges or overestimating AI's ability to address them.

## GenAI investments are changing the way work gets done

How enterprises are allocating their GenAI investments by business function



Source: Gartner, October 2023, NTT DATA research

**“We hear a lot about AI omnipotence or superintelligence (a.k.a. the AI singularity),”**

says Michele Biron, Senior Strategy Director at NTT DATA UK & Ireland

**“But if an LLM applied for a knowledge worker’s role, submitting a CV that accurately described its talents, HR would almost certainly reject its application because of its narrow skillset.”**

AI solutions need to be focused on the right tasks, augmenting human inputs on routines that are repetitive, complex and prone to human psychological bias. Junior employees, who benefit in a significant way from micro-augmentation, will become a good deal more productive – a transformation that should help to mitigate the growing scarcity of mid/late-career expertise caused by older employees exiting the workforce.

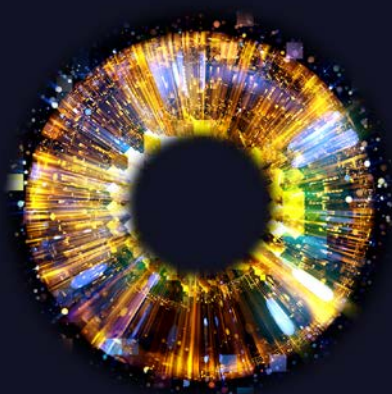
Senior employees will experience direct productivity gains from AI, but will benefit more from creating time for reflection, peer-to-peer collaboration and building better customer relationships.

AI will also create a need for new skills and roles, including assessing outputs and supervising, educating and managing AI systems. For the foreseeable future, therefore, employees will remain not just in the loop, but in control, too, overseeing a developing mosaic of micro-augmented processes across the whole telco.

**“Once established and reliable, these systems will take care of what I call the ‘action layer’,”**

says Francesco Palma, AI Solutions Director at NTT DATA UK & Ireland

**“They will free up human employees to spend more time making better decisions and thinking strategically.”**



## The rise of agentic systems

Micro-augmentation is already shifting to the next stage of evolution: agentic systems, which bring together a series of specialised AI modules (“agents”) to collaborate on related tasks under the supervision of a knowledge worker.

“A big gap exists between current LLM-based assistants and full-fledged AI agents, but this gap will close as we learn how to build, govern and trust agentic AI solutions.” Gartner

Agentic systems do much more than accept text entry, but they don’t operate as fully autonomous systems with the ability to set their own goals. Instead, each agent has an assigned role: it collaborates with other agents and makes incremental improvements to outputs based on feedback from the employee in charge.

Network operations management is an attractive use case scenario that

involves multiple tasks, including monitoring efficiency, minimising downtime, reducing maintenance, enhancing customer experience and planning for adaptive change. For example, understanding when, where and how users experience sub-par network performance should allow AI to identify tactical hardware upgrades in specific locations. Meanwhile, in finance departments, agentic systems create the prospect of the so-called zero-day close, which involves reconciling transactions and balances from across the organisation at the end of each 24-hour period, rather than on a weekly or quarterly basis.

Francesco Palma, technology solutions director at NTT DATA UK&I, sees agentic systems as a natural evolution of existing predictive and generative AI. “They will become the foundation for the next wave of automation, robotics

and simulation,” he says. “In the near future, we can imagine new employees being given access to an agentic system customised around their role, in HR, marketing operations or procurement.”

Once again, human telco employees will continue to play a pivotal – but changing – role. Depending on the scenario, the agents themselves will effectively become advisors and micro-employees, augmenting human-supervised workflows in ways that are timely, relevant, credible and actionable.

Telcos will also need to deal with the build or buy dilemma. “We believe that for many roles, especially senior ones with the potential for competitive advantage, enterprises will reject agents based upon generic models from third-party vendors,” says Biron. “Instead, they will create their own specialised agents and underlying models, based upon their own data, knowledge and processes.”

## Micro-augmentation: use case scenario

What does micro-augmentation look like in practice? Let’s take the example of a telco that sells hardware to a wide range of business customers. In the sales department of this telco, inbound RFPs arrive on a daily basis. From handsets to photocopiers, clients urgently need this hardware to upgrade existing facilities and open new offices and contact centres.

### The challenge

The problems start when these RFPs need to be reconciled with the telco’s sprawling catalogue of product offerings. Ideally, the human employees responsible for matching best-fit products with generalised requests (e.g. 300 fixed-line VOIP handsets) need an in-depth understanding of the use case scenario, the catalogue and the product combinations that will drive the optimum profitability and customer satisfaction.

But this is the exception, rather than the rule. Staff turnover is uncomfortably high. The department is understaffed and under pressure. Clients become irritated by the amount of time it takes to respond to their RFPs. Meanwhile, the backlog of inbound orders keeps growing, thanks in part to the success of new marketing campaigns. Ultimately, clients begin to look for more agile suppliers. Revenues decline, placing margins under additional pressure.

### The solution

Once generative AI is trained on the product catalogue and historic data, it can create an initial bill of goods for each client far more rapidly than a human employee. Employees and managers check and amend AI outputs and have more time to develop a consultative selling approach. Win rates, turnaround times and customer satisfaction all improve. As the system’s parameters are refined, margins improve too.

AI has increased productivity substantially by resolving the key blockage in the system. The business now has options: it can continue to generate enhanced profits, reinvest those profits in expanding operations or exploit the opportunity to improve sales performance.



# Getting down to work

AI has the potential to reduce operational costs, increase output quality, reduce turnaround times and improve customer satisfaction. In addition, from the core to the edge, AI will enable new digital services in automotive, energy, healthcare, media, mobile, retail, transportation and other verticals. In this article, we have focused on just one dimension of this opportunity: the potential of micro-augmentation to transform the productivity of knowledge workers.

Telcos will choose to harvest the benefits in different ways. At one end of the spectrum, the urge to reduce costs by automating repetitive tasks and basic data collection routines will prove attractive. At the other end, increasing quality, accuracy and speed of operations will create the space for innovation, new services and market share gains.

Telcos will have to develop specific behavioural and ethical guidelines for use of agentic systems – and AI more broadly – across the enterprise. In addition, encouraging the right workforce culture is fundamental: in response to the fears that surround AI, organisations need to create the skills, mindsets and structures required to drive high levels of adoption. Allowing employees to identify deployment opportunities, appointing internal AI champions, being transparent about objectives and demonstrating benefits will all accelerate progress.

Ultimately, AI-driven innovation will resemble the impact of scientific management in the 19th century and the Internet in the 20th century. But then as now, progress relies upon painstaking efforts to identify – and quantify – the opportunities for productivity improvements with true breakthrough potential.

**To focus your efforts, we recommend a two-phase approach to planning, developing and scaling micro-augmentation projects**

## Phase 1.

### Gen AI Launchpad

Initially, micro-augmentation projects should begin with an agile, lightweight approach focused on actual business processes, rather than general pain points. A small team can then proceed to rapidly develop prototypes with the aim of developing a data-driven roadmap. In this phase, all activity should be underpinned by lean business cases, service design and customer feedback.

## Phase 2.

### The AI Factory

In this phase, the development effort begins to take on the form of a central hub dedicated to innovative micro-augmentation. The hub, resourced without negatively impacting BAU, makes a simple offer to the business: “Bring us your challenges, and we will supply the solutions.” Engagement with business units follows a well-defined sequence: Discovery and Prioritisation, followed by Development.

## How will you thrive as an AI-empowered telco?

Our scoping workshops have a simple objective: to identify high-impact opportunities for generative AI deployment in your telco business.

Book a 45 minute complimentary scoping workshop to determine how you can best augment with AI.

[Book now](#)

