

NOKIA

Nokia IMS

Where voice becomes experience



Why change is needed

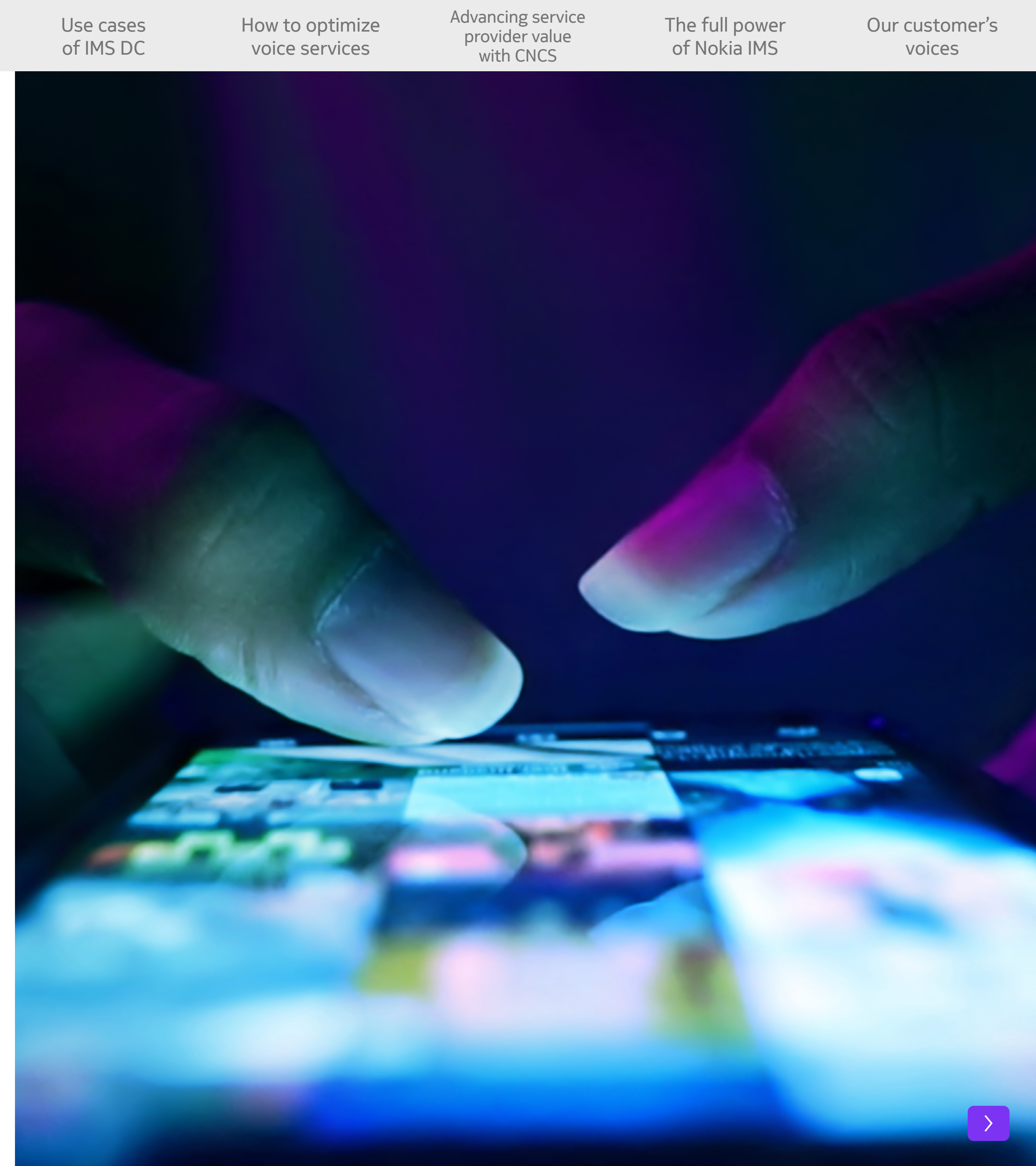
Voice has never lost its purpose. It has always been the most natural way to connect, to share, to solve, to comfort. But in recent years, attention has shifted elsewhere. Data became the new fuel, and applications became the visible face of innovation.

Yet beneath all those layers, the human act of speaking remains at the center of communication. Today, the industry stands at a point of renewal. Fifth generation networks bring voice back into focus, not as a legacy service but as a renewed capability. They offer the latency, reliability, and intelligence that finally allow voice to take its rightful place within a broader digital experience.

Voice is not something to maintain; it is something to evolve. In every practical 5G deployment, whether the non-standalone option or the full standalone model, IMS continues to be the trusted foundation for

carrier-grade voice. CS fallback (CSFB) from LTE is still possible, but it is not a 5G voice model anymore. In every 5G deployment industry standard solution is IMS for carrier-grade voice.

It manages continuity, identity, and quality across every access type. When IMS evolves to a cloud-native model and opens through APIs, it becomes more than an engine for calls, it becomes a programmable platform for innovation. The transformation is not about replacing what works, but about unlocking what is already powerful within the network. With openness, automation, and intelligent design, Communication Service Providers (CSPs) can bring forward a new generation of voice services that merge human connection with digital innovations. This is the moment to rediscover the full potential of voice.



What are telco needs?

CSPs have built the most advanced networks on Earth. They already hold the infrastructure that enables every digital conversation, every streamed idea, every transaction that travels across a network.

What they need now is the means to turn that strength into new forms of value. Two priorities guide this revolution: monetize and optimize. To monetize is to see voice as more than a call. It is to integrate voice into broader services bundled, personalized, or context-aware.

To optimize is to simplify how those services are delivered: cloud-native, automated, and agile enough to scale without friction. IMS already gives CSPs a remarkable advantage: a system that understands every subscriber, every call flow, and every quality dimension. No external player has this level of trust or insight. By opening what already exists, through APIs, through exposure frameworks, through programmable interfaces, operators can turn internal capabilities into shared opportunity.

Through Nokia's Cloud Native Communication Suite (CNCS), this becomes manageable at scale.

Through the Telecom Application Server (TAS), it becomes programmable.

Through the IMS Data Channel, it goes beyond voice-only and easily offers entirely new services.

The opportunity is not distant. It is already inside the network, waiting to be used. When CSPs combine operational excellence with creative service design, they move from maintaining connectivity to enabling possibility.



The vehicle of TAS

Inside every IMS core lies a space where innovation happens. That space is the Telecom Application Server, the intelligent layer where service logic, policy, and creativity meet. TAS gives voice flexibility. It allows operators to design, adapt, and personalize communication in ways that make sense for consumers, enterprises, and developers alike.

TAS interprets events, manages signaling, adds or removes participants, and extends calls into applications and data flows. It transforms call control into service control. In its modern, microservices-based form, TAS exposes open APIs: call control, conferencing, messaging, presence, notification, and more. Developers can use them to build new features without needing to understand the complexity of the underlying network.

This openness keeps reliability intact while encouraging innovation at the edges. Imagine a voice session that automatically confirms the identity of the caller or a customer interaction that triggers contextual analytics in real time.

Imagine enterprises integrating voice APIs directly into their platforms, linking calls with business data, AI assistants, or fraud protection tools. TAS makes these ideas not just possible but practical. For CSPs, TAS is both an operational asset and a commercial platform. It lets them monetize the intelligence of the network: charging not for minutes, but for the quality, context, and assurance of every interaction.

It is also a foundation for partnership: a place where developers, enterprises, and the operator's own teams can innovate together. TAS represents the spirit of Nokia's voice philosophy: reliable at the core, open, and always designed for what comes next.

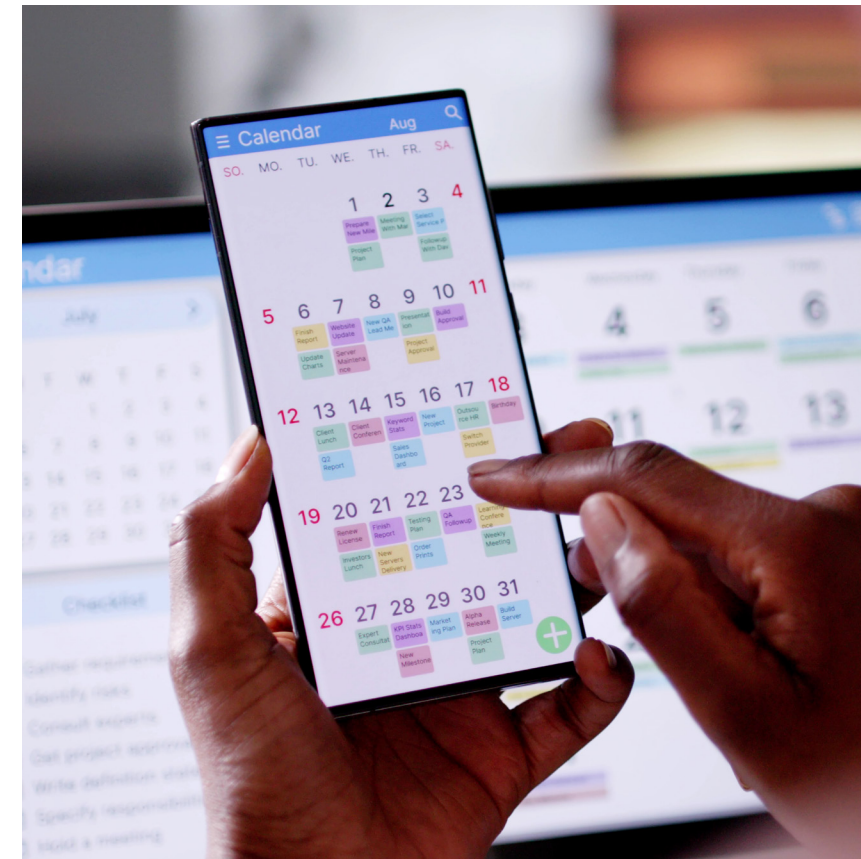


Use cases of TAS



Verified human calling

A parent receives a call labeled “School Nurse – Verified by Operator.” Trust appears on the screen before the first word is spoken. Verification is built into the network, confirming authenticity and identity within the call itself. Enterprises value the verified label, and customers gain immediate peace of mind. Operators turn trust into a visible service that strengthens every human connection.



Seamless persona calling

One identity, many moments. A user moves easily between professional, personal, and family modes. Each profile follows its own rules for availability, voicemail, and notifications. TAS orchestrates these transitions based on context such as calendar entries, time of day, or location. It brings digital courtesy to life as a network feature.



Contextual contact center

A customer calls a bank. Before the call connects, TAS attaches relevant data, account tier, language preference, or recent transactions. The system routes the call to the right agent without delay. Customer satisfaction rises; operational costs fall. For CSPs, this is an elegant demonstration of how context can create measurable value.



Collaboration trigger

In a corporate project meeting, TAS detects a word like “schedule” and triggers a connected application that creates a meeting invite automatically. Voice becomes a live interface to productivity. This is not a futuristic vision, it is already achievable through open TAS APIs today.



AI sentiment insight

During a customer support call, TAS integrates with an AI engine that analyzes tone, pacing, and language in real time. If the caller's stress level increases, the system can alert the agent or suggest adaptive responses on screen. The AI model continuously learns from outcomes, improving empathy and efficiency across all future interactions. For CSPs, this demonstrates how AI and voice together can elevate service quality from reactive to intelligent.

The vehicle of IMS Data Channel

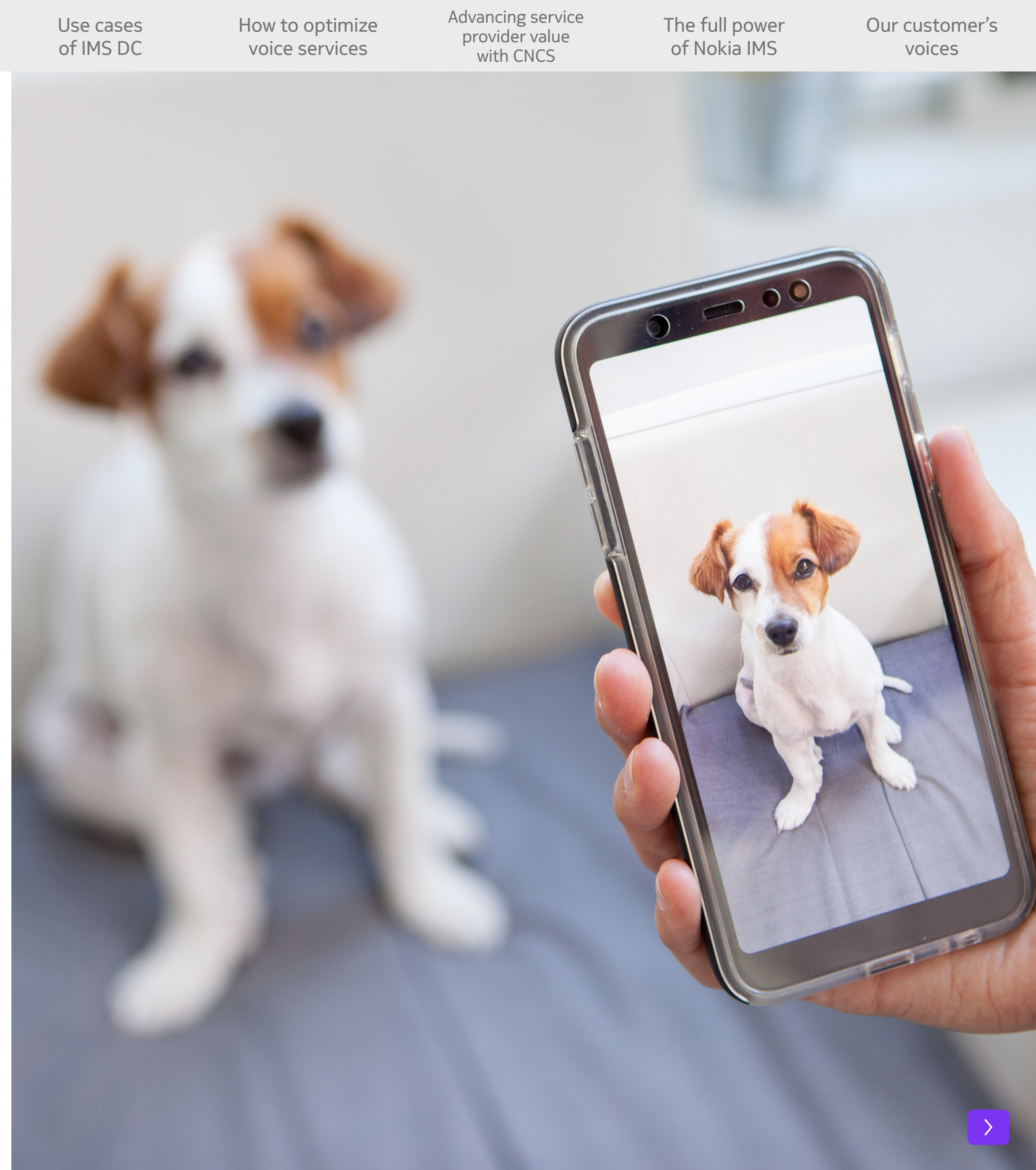
The IMS Data Channel extends what voice can be. It lets people share information while they talk, such as forms, images, screens, or documents, all within the same secure call. Everything happens in real time, under the same quality and trust as the operator network.

A simple voice session becomes a shared space where actions and decisions happen together. Behind this simplicity is an elegant design. While the voice call is active or even during call setup, a small Java script application runs on the device and quietly opens a channel for data exchange. The channel can link two devices directly or connect one device with another entity on the internet, such as a data source or an application.

It connects through the same IMS environment that manages voice, so both flows, speech and data, move together as one experience. There is no need for extra applications or outside platforms because the capability is already part

of the network itself. For the user, it feels natural. A customer and a bank advisor can review a loan offer together, seeing the same figures update as they speak.

A field technician can show equipment readings to a remote expert who sends back configuration data in the same moment. For enterprises, this is collaboration in its most direct form, built on trust and simplicity. For the operator, it behaves like any other voice service: it is secure, monitored, and scalable, managed by the same tools that run the IMS core. In essence, the IMS Data Channel turns every call into a workspace that is safe, immediate, and interactive. It keeps voice as the human center of communication while adding the power of shared action. It is voice evolving into collaboration.



Use cases of IMS DC



Live loan offer review

A customer calls a bank advisor from the operator portal. During the same session the advisor shares a live offer sheet through the IMS Data Channel, and the numbers update as they speak. The customer selects terms, uploads an identity photo, and confirms with a simple approval step. No extra applications, no third-party routing, no loss of trust. Operators provide the secure space where conversation and transaction happen together, with quality and privacy controlled in the network.



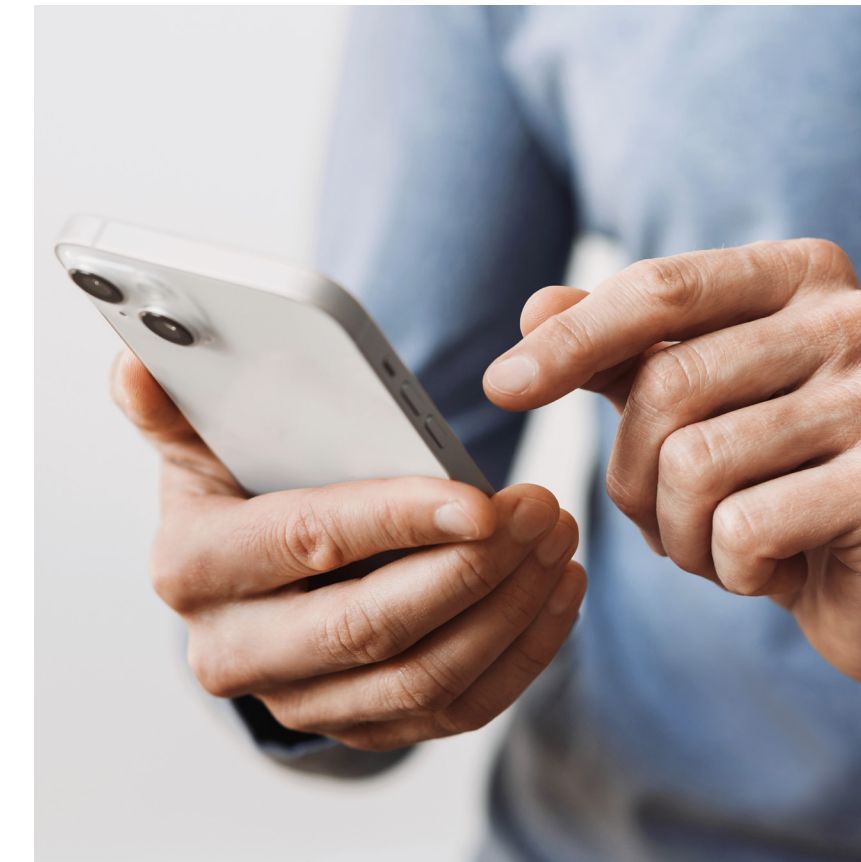
Smart delivery confirmation

A courier calls the recipient to confirm a delivery. Through the same call, photos and location details are exchanged instantly through the IMS Data Channel. The recipient signs digitally, and the confirmation is stored within the operator domain. The process is quick, transparent, and fully trusted. Voice carries not only words but proof, creating confidence for both sides while keeping privacy and control inside the network.



Smart construction site

A site engineer calls the design office. Blueprints are shared and annotated in real time while the discussion continues. Sensor data from machinery flows alongside the call, showing progress, temperature, and performance levels as they happen. The network synchronizes everything securely, ensuring accuracy and control. For enterprises, this is collaboration with compliance and efficiency. For operators, it is voice redefined as a service backbone that connects people, data, and decisions in one continuous flow.



Legal co-signing

Two parties and a legal advisor join a single call. The contract is displayed, reviewed, and signed during the session. Every action is authenticated by the operator's network identity. This is not just convenience; it is digital trust delivered as a service. Each of these examples shows the same truth: when voice carries data, it becomes an engine for engagement. CSPs are uniquely positioned to deliver this because they own both the identity and the quality of the connection.



AI quality inspection

A manufacturer's remote quality engineer joins a live video-assisted call with a factory technician. Through the IMS Data Channel, images of each component are streamed securely while an AI model trained for defect detection analyzes them in real time. If an anomaly appears, the AI highlights it instantly on both screens and suggests corrective steps. The result is faster decision-making, fewer errors, and a digital audit trail preserved inside the operator domain. For CSPs, this is how AI and IMS DC together turn voice collaboration into intelligent assurance.

How to optimize voice services

The story of optimization begins where imagination meets execution. All the promise of new voice services, programmable, immersive, and intelligent, depends on how efficiently the network can deliver them. This is where Nokia Cloud Native Communication Suite, or CNCS, makes the difference. CNCS was created to simplify the way voice networks are built and run.

It consolidates what used to be multiple IMS functions into a single Cloud Native Network Function. That means fewer moving parts, faster deployment, and a lighter footprint, up to forty percent smaller compared with a traditional IMS layout. It is fully containerized, scalable, and easy to manage. Each instance is designed as a self-contained environment that integrates the Session Border Controller, the Call Session Control Function, the Telecom Application Server, and the Media Resource Function. From an operational view, CNCS appears as one element, yet inside it holds the full intelligence of the IMS voice core. The benefits extend far beyond technical elegance. CNCS turns daily operations into a model of automation.

It supports continuous software delivery, GitOps, and rolling upgrades without service

interruption, giving CSPs the freedom to evolve at the pace of software rather than the rhythm of hardware. The result is lower cost, lower risk, and higher agility. CNCS fits wherever a CSP is in its voice journey.

It can complement an existing IMS deployment, used as a modern engine for a specific segment such as enterprise voice, fixed voice, or emergency calling, or it can power a greenfield IMS from the ground up.

CNCS also suits disaster recovery scenarios, serving as a back-up IMS system running on a different CaaS or site, with full scalability and failover capability within a single CNF architecture.

In either case, it brings consistency, stability, and simplification. For operators managing multiple voice domains, CNCS provides a unified foundation for all of them. For those launching new services on fifth generation networks, it provides the fastest way to start with confidence. Optimization is not only about saving resources; it is about preparing the network to deliver new value with clarity and speed.



Advancing service provider value with CNCS



1. Unified simplicity

CNCS reduces IMS complexity by merging key functions into one deployable unit. What once required separate integration now arrives pretested, coherent, and ready for service. It simplifies operation and lifecycle management from day one.



2. Cloud native architecture

Built entirely on container technology, CNCS supports elastic scaling, rapid updates, and continuous delivery. Resources expand or contract according to demand, maintaining performance while conserving power and cost.



3. Service convergence

Mobile, fixed, and enterprise voice services run on the same platform. This enables CSPs to consolidate operations and deliver consistent quality across all access types and customer segments.



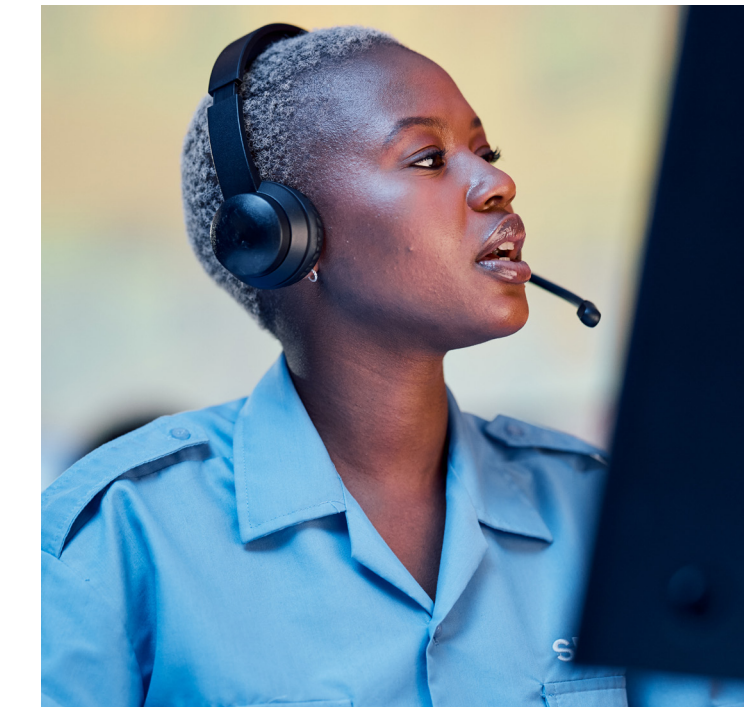
4. Openness and manageability

CNCS exposes standard interfaces for orchestration, monitoring, and configuration. With support for REST APIs, it integrates seamlessly into modern automation frameworks.



5. Automation and efficiency

Zero touch deployment and closed loop assurance make maintenance almost invisible. Upgrades, scaling, and fault recovery are automated, so operations focus on innovation instead of intervention.



6. Proven performance

CNCS is already trusted by leading operators around the world. It runs live networks delivering voice services, all with high availability and predictable efficiency.

Advancing service provider value with CNCS

We are entering a new era for communication. Voice is no longer the endpoint of a conversation; it is the starting point of an experience. A simple call can now trigger automation, analytics, collaboration, and emotion recognition, all secured and orchestrated within IMS.

Fifth generation networks give us the resources to realize this vision with vast bandwidth, minimal latency, and reliability that feels almost absolute. The IMS core provides the stability and intelligence that make these possibilities real. Together they open the door to a world where communication moves beyond sound into presence.

Real time translation, spatial audio, and immersive meetings are only the beginning. As billions of connected devices join the Internet of Things, voice becomes their common language. It will guide homes, vehicles, factories, and cities, linking human intent to digital action. Speaking will no longer be limited to people; it will reach across sensors, robots, and intelligent agents that respond with context and purpose.

Augmented reality will make communication visible. Voice will shape shared spaces where

teams design, govern, teach, and heal together. Enterprises will meet clients inside interactive environments that merge conversation and data. Governments will serve citizens through spoken interfaces that simplify every task from licensing to healthcare. Daily life will flow with less friction, more awareness, and greater connection. Through TAS and CNCS this future becomes practical. They simplify deployment, automate scaling, and let features evolve continuously. CSPs can bring innovations to market quickly, responding to customers in days rather than months. The network stops being static and becomes a creative medium. Voice itself is changing. It keeps its natural warmth but adopts new attributes: awareness, adaptability, and intelligence. It listens, learns, and acts. It becomes the most human interface in an increasingly digital world.

Voice is not the past; it is the foundation of what comes next. It has carried human stories for a century, and now it will carry intelligence, context, and trust into every digital moment. The opportunity is here. And Nokia is ready to help operators bring it to life.



The full power of Nokia IMS

Every CSP has a unique starting point. Some are introducing IMS for the first time; others already run large, multi vendor deployments. Wherever they begin, Nokia provides a complete and coherent foundation for voice, spanning CNCS for cloud-native environments and traditional CNF based IMS for hybrid and large-scale architectures.

This breadth matters. It means an operator can modernize at its own pace, extending the life of existing investments while preparing for the demands of fifth generation networks. Nokia's IMS portfolio covers all service layers, from the border gateway and call control to TAS, analytics, and network exposure. Each component is interoperable, secure, and designed to evolve. For new entrants building greenfield networks, CNCS offers the fastest route to a fully containerized voice core.

For established CSPs, Nokia IMS brings consistency and modernization without disruption. The architecture scales horizontally, the management tools unify across domains, and the service logic remains portable across generations of infrastructure. No matter where a CSP is in its journey, IMS remains the essential core for voice, today, tomorrow, and beyond. From VoLTE to Voice over New Radio, from enterprise communications to the immersive experiences of the future, Nokia IMS ensures continuity, quality, and confidence. Optimization and monetization come together here. When TAS and the IMS Data Channel add service intelligence on top, and CNCS ensures operational agility beneath, the result is a complete voice ecosystem ready for every opportunity the next decade will bring. Nokia IMS is not only a network solution; it is a platform for progress.



Our customer's voices

Deutsche Telekom makes it clear that cloud native IMS is the key to transforming voice into a scalable, programmable and monetizable service layer. They show how automation, GitOps and container based operations enable faster optimization and resilient deployment at scale. Watch the full talk to hear directly how a tier one operator is applying these principles to real world cloud native voice networks.

<https://www.youtube.com/watch?v=k3tinS3sMHY>

Rakuten explains how cloud native IMS became the entry point to treating the core and voice as a programmable service platform rather than fixed network plumbing. They share real lessons from migrating large scale core functions onto their own cloud, highlighting faster service creation, better cost control and tighter automation. Watch this talk to see how cloud native voice monetization and optimization look when a digital first operator puts it into production.

<https://www.youtube.com/watch?v=0kbY9GE71A4>

Vodafone and DellOro explore how the IMS Data Channel opens new monetization opportunities by exposing secure, network native communication capabilities to developers and enterprises. The discussion links concrete operator use cases with an analyst perspective on market readiness, business value, and how IMS can create differentiated services alongside existing apps. Watch the webinar to see how IMS Data Channel can turn cloud native voice into a scalable, revenue generating platform.

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About Nokia

At Nokia, we create technology that helps the world act together.

As a B2B technology innovation leader, we are pioneering networks that sense, think and act by leveraging our work across mobile, fixed and cloud networks. In addition, we create value with intellectual property and long-term research, led by the award-winning Nokia Bell Labs, which is celebrating 100 years of innovation.

With truly open architectures that seamlessly integrate into any ecosystem, our high-performance networks create new opportunities for monetization and scale. Service providers, enterprises and partners worldwide trust Nokia to deliver secure, reliable and sustainable networks today – and work with us to create the digital services and applications of the future.

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