

# Nconnect Voice

How businesses with analogue communications technology can benefit from the cloud with SIP Trunk.

The new freedom in business communications.



**NFON**  
Cloud Telephone System



# Embracing a future-proof communications infrastructure.

## Securing long-term agility means choosing the right service provider to keep all options open.

A lot has been achieved in recent years in terms of consolidating legacy voice communication lines and Internet cables into a converged IP-based infrastructure. New networks have emerged, providing immense power to handle the ever-increasing amounts of traffic brought about by big data, social media, the Internet of things (IoT) and mobile communications. With the technology being readily available, organisations are seeking to gain a competitive edge by upgrading to only the latest and greatest technology. All IP is coming, and everyone will benefit.

Being on top of technical innovation, NFON enables its customers and partners to do just that. With the NFON Cloud Telephone System, we offer a completely cloud-hosted voice communications system whose scope of features and functions is unparalleled.

But not all businesses are ready to give up on their on-premise PBX systems and migrate to the cloud. Having made considerable investments into their communications infrastructure, many of them prefer to keep it in place as long as it gets the job done in a reliable and secure manner.

For these companies, Nconnect Voice offers the option to leverage their on-premise PBX systems whilst converging their communications and Internet networks into one, increasing efficiency, productivity, reliability and profitability.

The good news is that there are no monetary obstacles. Nconnect Voice helps businesses reduce costs from day one. If you haven't already migrated to IP-based telephony, now is the time!

When switching to Nconnect Voice, service provider selection is an important strategic decision – not all providers are created equal. Choosing the right service provider impacts or increases your flexibility to develop a solid communications infrastructure and overcome any challenges along the way.

We have good reason to believe that NFON is the best provider to get your business ready for all IP.

**Hans Szymanski**  
Chief Executive Officer





## Annual growth by powers of ten. Within the shortest time, digital communications have come a long way.

Digital communications technologies have come a long way. From the first Internet connections established over copper landline telephone networks in the 1980s to today's high-velocity fibre-optic networks, providers are constantly being challenged to develop technologies capable of transmitting huge amounts of data. To enable interoperability between systems, data networks that relied on the most diverse topologies, technologies and protocols were created.

Along with the growth of the Internet and the emergence of mobile telephony, ISDN (Integrated Services Digital Network) replaced analogue telephone networks, providing the means to transfer both voice and data across the same network infrastructure.

Whilst ISDN was well-suited to handle the data rates for voice connections, its limited bandwidth soon meant a bottleneck for the huge data flow of the Internet. The massive growth in digital communications, along with an overwhelming mass of data for processing, evaluating and storing, is challenging network providers to develop technologies that ensure the operability, efficiency and economic feasibility necessary to keep businesses competitive.

Overlapping networks capable of supporting emerging trends such as big data, Industry 4.0, the Internet of things (IoT), data mobility, social networks and cloud computing were built up. Naturally, maintaining and

interconnecting these overlapping networks incurred tremendous costs, which eventually led providers worldwide to consolidate legacy infrastructures into all-IP networks.

For businesses, the migration to all IP means a leap forward in effectiveness and security, along with a reduction in costs. However, not all organisations can accomplish the switch overnight, and many of them have made considerable investments in the past to procure, implement and integrate their existing IT infrastructure. For these businesses, Nconnect Voice technology offers a way to benefit from modern, high-performance IP-based communications whilst keeping their legacy PBX system. Being the first step towards an all-IP setup, Nconnect Voice enables these businesses to protect their historical investments whilst keeping their options open for future technical development.

# What is Nconnect Voice?

## The protocol that connects future generations of communications devices.

SIP (Session Initiation Protocol) is a signalling protocol used to control communication sessions over IP (Internet Protocol) networks. It has emerged as the universal standard for Voice-over-IP (VoIP) services. To put it simply, SIP is a way to initiate, terminate, accept, reject, hold or redirect voice calls over the Internet.

The unconfined accessibility of the Internet anywhere and anytime has led to the creation of SIP-based trunking services which enable organisations to migrate from physically separate voice and data connections to a consolidated IP-based network infrastructure.

A trunk is a phone line that connects an on-premise PBX system to the provider's network to enable calls over a predefined number of channels. It provides a path for both voice transmission and signalling, e.g. dialling instructions and call control. In contrast to traditional PRI (Primary Rate Interface) or BRI (Basic Rate Interface) connections, the total bandwidth can be shared, providing greater flexibility to adapt the available bandwidth to voice and data traffic.

Traditionally, trunks had to be leased from the carrier provider in blocks containing a predefined number of channels, each representing an extension and its respective phone number. In Germany for example, the only choice was between 2 channels (BRI) or 30 channels (PRI). The connection was established using TDM (time-division multiplexing) technology, with the bandwidth available per channel being restricted to 64 kbps.

In a similar manner, Nconnect Voice connects the telephone system to the carrier network, enabling inbound and outbound calls over a predefined number of voice channels. In contrast to traditional trunking, the Nconnect Voice connection is established over the Internet, enabling a host of technical and operational benefits for business communications.

### Requirements for Nconnect Voice.

It is a common misconception that switching to Nconnect Voice requires additional hardware and handsets. In fact, Nconnect Voice can be implemented using legacy on-site PBX systems. Connecting a traditional PBX to a Nconnect Voice service typically requires a SIP gateway, hardware that converts classic telephony interfaces to SIP-enabled IP interfaces. The ability to use existing devices is among the most obvious

benefits of Nconnect Voice as it helps businesses contain communications costs and simplify operations.

Whilst any legacy telephone system can be connected to a Nconnect Voice service, different technologies, mostly depending on the age of the existing telephone system, pose different requirements to the setup. Whereas some older PBX systems will require inexpensive hardware to connect to the Nconnect Voice, no additional hardware is needed in most cases.

### Older legacy, non-IP PBX systems.

Older PBX systems purchased more than five years ago typically rely on PRI, T1 or Business Line interfaces for connectivity. Connecting these telephone systems to a Nconnect Voice service requires an IAD (Integrated Access Device) or a similar piece of hardware to convert voice signals and signalling protocols. An IAD provides an affordable way of extending the usefulness of legacy hardware.

### More recent, non-IP PBX systems.

Many legacy telephone systems can be upgraded to provide Nconnect Voice interfaces. Depending on the respective vendor, the measures required to establish SIP connectivity vary, from a simple software upgrade to considerable hardware and software replacements. Typically, these recent legacy PBX systems will connect directly to the Nconnect Voice service.

### IP PBX systems.

Being the most recent PBX generation, IP telephone systems offer native Nconnect Voice interfaces, which enable direct connection to the Nconnect Voice, along with quick and easy configuration. All you have to do to enable Nconnect Voice is establish a connection and enter the provided credentials. NFON is collaborating with many leading IP PBX vendors to obtain certifications for their devices, ensuring easy setup and interoperability. However, depending on the vendor, some devices may require additional equipment.

# Nconnect Voice service: Benefits for organisations.

## On-demand scalability and instant cost savings in an all-IP-ready environment.

### **Total cost of ownership.**

As shown, little or no investment is needed to connect an on-premise telephone system to a Nconnect Voice service. Additionally, the technology offers a range of options and benefits that help businesses significantly reduce costs.

**Call charges:** Businesses that operate internationally typically maintain offices in different countries. Consequently, a significant share of telephone traffic results from internal collaboration across the company. In a traditional setup, this will result in disproportionately high long-distance call charges. With Nconnect Voice, long-distance charges do not apply as all calls are considered local.

**Capital expenses:** Switching to Nconnect Voice enables businesses to consolidate their voice and data networks into a converged, IP-based infrastructure, significantly reducing capital expenses. Moreover, the useful life of legacy PBX hardware may be extended across headquarters and offices.

**Operational costs:** Using a converged network rather than two disparate systems for voice and data transfer reduces maintenance and upgrade costs. Furthermore, trunks do not have to be leased in predefined number blocks any longer – organisations gain the flexibility to scale their telephony solutions to meet demand.

### **Efficiency and productivity.**

In an era of rapidly accelerating product cycles, 24/7 customer support, global collaboration and cost pressures, continually increasing efficiency and productivity is the core of business success. Nconnect Voice provides companies with a means to address communication challenges and stay ahead of the game.

### **Quality of speech.**

Nconnect Voice delivers high-quality, reliable digital voice services whilst leveraging legacy, on-site telephone systems. In doing so, it facilitates easier communications with better service.

### **Easily upgradable.**

Nconnect Voice paves the way for unified communica-

tions. With NFON cloud communications, businesses have access to a wide range of industry-specific, IP-based communications solutions which can be added on at any time, just in time.

### **Improved collaboration.**

VoIP technology and Nconnect Voice applications provide a platform that enables unified communications, conferencing and collaboration. As a result, moving to Nconnect Voice may prove to be a game changer for teams working across distributed locations.

### **Business process optimisation.**

The improved business processes enabled by using Nconnect Voice affect a range of other areas such as employee and customer satisfaction, collaboration, compliance and many more.

### **Redundancy and reliability.**

Whilst legacy networks were extremely resilient and highly available, an outage with the service provider would leave customers disconnected for an unknown length of time. Nconnect Voice services from a top provider such as NFON are hosted on redundant data centres, making them virtually fail-safe.

### **Consolidating vendors company-wide.**

As companies were historically confined to local offers when procuring telephony for subsidiaries, they typically still maintain contracts with multiple vendors. Consolidating these vendors in favour of a one-stop provider may lead to significant savings, even more so as Nconnect Voice comes with usage-based pricing and reliable performance.

### **Consolidating technologies across subsidiaries.**

For businesses with multiple offices and locations, Nconnect Voice opens up additional potential to increase efficiency and reduce costs. High-quality Nconnect Voice providers maintain a network of international carriers that enables them to offer worldwide service delivery and phone number localisation. By running voice and media data through Nconnect Voice, employees and clients across all subsidiaries enjoy a seamless communications experience, increasing in-house collaboration and enhancing customer service.



### **Simplifying management.**

Nconnect Voice eliminates the need for hard wires, which significantly reduces maintenance costs. Nconnect Voice providers such as NFON offer a variety of additional communications services, so businesses can rely on a single source for all communications systems and services.

### **Business development.**

With innovative technologies and digital communication channels emerging at an unprecedented pace, businesses are constantly being challenged to react quickly. Gaining the flexibility, scalability and leeway to adapt to rapidly changing business and technical requirements is made possible with Nconnect Voice.

### **Gaining flexibility and scalability.**

Nconnect Voice is a reliable way to support fluctuations and growth in call volume without overpaying for unneeded extensions. Connecting with an on-premise PBX to Nconnect Voice enables businesses to add capacity on demand. To support growth, capacity can be added with little effort and no on-site installation, resulting in significant time savings and cost reduction.

### **Keeping all options open.**

As more companies replace on-premise PBX systems in favour of hosted telephone systems, Nconnect Voice could also be an attractive intermediate solution for those businesses that are not yet ready for the move. Nconnect Voice keeps all options open for a move later to full cloud services. With Nconnect Voice, the NFON Cloud Telephone System is simply one step away, opening up a variety of communications services.

# Implementing Nconnect Voice.

## IP-based PBX vs legacy hardware phone – choosing the right approach.

When it comes to implementing Nconnect Voice in an organisation, there are two basic approaches to choose from, depending on the type of telephone system. Staying with a legacy hardware PBX or using an IP-based PBX both have their pros and cons.

### Pros and cons: Nconnect Voice with a legacy, on-premise PBX.

Businesses have often made significant investments in on-site telephone systems with legacy handsets, making them reluctant to go for a complete replacement. On the other hand, many are seeking to tap into the benefits of a SIP-based solution. Nconnect Voice enables businesses to do so at minimal expense by connecting the traditional PBX to the service through a multiport VoIP gateway.

#### Pros

- › Extended usage for legacy equipment means no additional investment
- › No replacement of hardware phones required
- › Reduced call rates, no charges for calls between subsidiaries
- › No training required as call procedures remain unchanged

#### Cons

- › Prolonged hardware maintenance costs
- › All-IP telephony features unavailable

### Pros and cons: Nconnect Voice with an IP PBX.

Especially when an entirely new infrastructure ought to be implemented, going with an IP telephone system may prove beneficial. This means that SIP-enabled equipment must be procured and connected to the NFON service to interact directly with the trunk. NFON cooperates with many IP PBX vendors to obtain certifications that ensure easy set up and optimal interoperability.

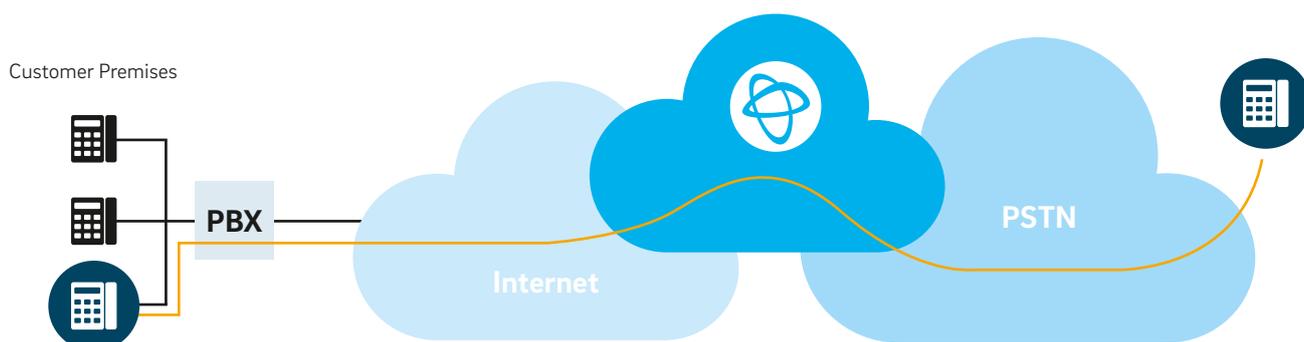
#### Pros

- › Advanced features
- › Maintenance costs are significantly lower than for legacy PBX systems

#### Cons

- › Investment in additional hardware
- › Staff must be trained

If you are considering the move to an IP-based PBX, be sure to compare its features and benefits to those of the NFON Cloud Telephone System.



## Nconnect Voice vs NFON Cloud Telephone System

On-premise IP PBX + Nconnect Voice	NFON Cloud Telephone System
Investment in PBX hardware	No hardware required
Investment in phone hardware	Existing IP phones may be used
Installation and maintenance fees	Unlimited updates, free of charge
Scales, yet each office needs a separate PBX installation	Unlimited scalability across locations
Limited features, dependent upon vendor and model	Over 150 high-end features
Possible limitations with enterprise app integration	Easy integration with CRM and other enterprise-level applications
Charges based on actual use	Charges based on actual use

### Starting up – on-premise or cloud-based PBX?

Offering a host of benefits ranging from low maintenance to on-demand scalability and business continuity, as well as the availability of a variety of complementary solutions and services, a cloud telephone system will likely be the go-to means of voice communications for most businesses.

Even though the benefits of a sophisticated cloud telephony service are hard to ignore, some companies must stay with their existing setup for many reasons. For these businesses, Nconnect Voice offers an attractive intermediary technology that helps them increase productivity, decrease expenses, and get ready for all IP.

The NFON Cloud Telephone System offers compelling advantages over an on-premise solution, especially for companies spanning distributed locations, with a mobile workforce and/or employees working from home.

However, if you prefer to go with the on-premise solution using Nconnect Voice, you can also make the change to the NFON Cloud Telephone System whenever you choose, without switching your service provider.

### Choosing the right service provider.

As the performance of communications services is critical to business success, service provider selection is a fundamental strategic decision. Not all providers are created equal, nor are the solutions and services they offer. Whilst some only offer one service, other providers such as NFON offer a wide range of communications

services, providing flexible options for customers to expand and scale their businesses – whenever and wherever they need to, just in time.

When determining which service provider to go with, organisations should look closely at how well the service provider matches to their respective growth strategies. There are a number of prerequisites to look for in a service provider in order to narrow down the list of candidates.

Proven service providers with a long track record of experience – such as NFON - will offer easy integration with common enterprise applications and will develop additional interfaces to keep up with market demand. They will also have a reliable infrastructure in place, with highly available inland servers that comply with regulations. Additionally, providers such as NFON will maintain their own international carrier networks, securing unrestricted worldwide connectivity.

In addition to these basic considerations, there are many questions to ask in order to evaluate how well the telephony solution will perform with respect to ease of operations, flexibility, scalability and TCO.

Nconnect Voice is the state-of-the-art means to enable cloud-based telephony with any on-premise PBX system and will remain so. Nconnect Voice is the go-to solution for companies and organisations seeking to leverage their existing PBX investments. With service provider selection being a fundamental strategic decision, the options should be scrutinised closely to obtain a high-

grade service that offers optimal voice quality and on-demand scalability, along with competitive pricing.

Long-standing experience, a fail-safe infrastructure certified to the highest security standards, a comprehensive international carrier network and a wide range of cloud services options place NFON at the top of the list.

### Important questions to ask

- 1 Should we choose Nconnect Voice or move directly to a cloud-based PBX?
- 2 How long has the provider served our market, and what is their reputation?
- 3 Where are the servers located? Do they comply with the relevant regulations?
- 4 Will individual development be necessary to implement Nconnect Voice?
- 5 What Service Level Agreements does the provider offer?
- 6 Does the solution require the purchase of additional hardware?
- 7 Does the solution require the installation of additional software?
- 8 What are the contract periods? Is it possible to easily switch to another provider?
- 9 Can channels be easily added/removed to scale?
- 10 How do charges work? Will we only pay for what we actually use?
- 11 Does the provider offer additional services to support expansion?

### Data Security Made in Germany

Nconnect Voice is hosted on secure, geo-redundant, inland data storage centres. Our servers comply with the EU Electronic Communications law and meet the highest standards of data security, system availability, accounting precision, and many more. During technical malfunction on your premises, e.g. a power outage, Nconnect Voice will remain available.

NFON data storage centres have been certified according to ISO/IEC 27001 – Information Security Management. The speech quality of the NFON Cloud Telephone System has been assessed and certified by TÜV Saarland, a German certification authority respected by some of the world's most trusted organisations.





# About NFON AG.

Headquartered in Munich, NFON AG is the only pan-European cloud PBX provider – counting more than 15,000 companies across 13 European countries as customers. NFON, the cloud telephone system, offers over 150 functions as well as a seamless integration of premium solutions. With our intuitive communications solutions, we enable European companies to improve their work a little, every single day. NFON is the new freedom of business communication.



**Cloud solution 'made in Germany'**



**High savings potential**



**Unlimited capacity**



**Intelligent functions**



**Easy to use**



**Network of local service partners**

☎ 08000 - 636624

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Cloud Telephone System

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