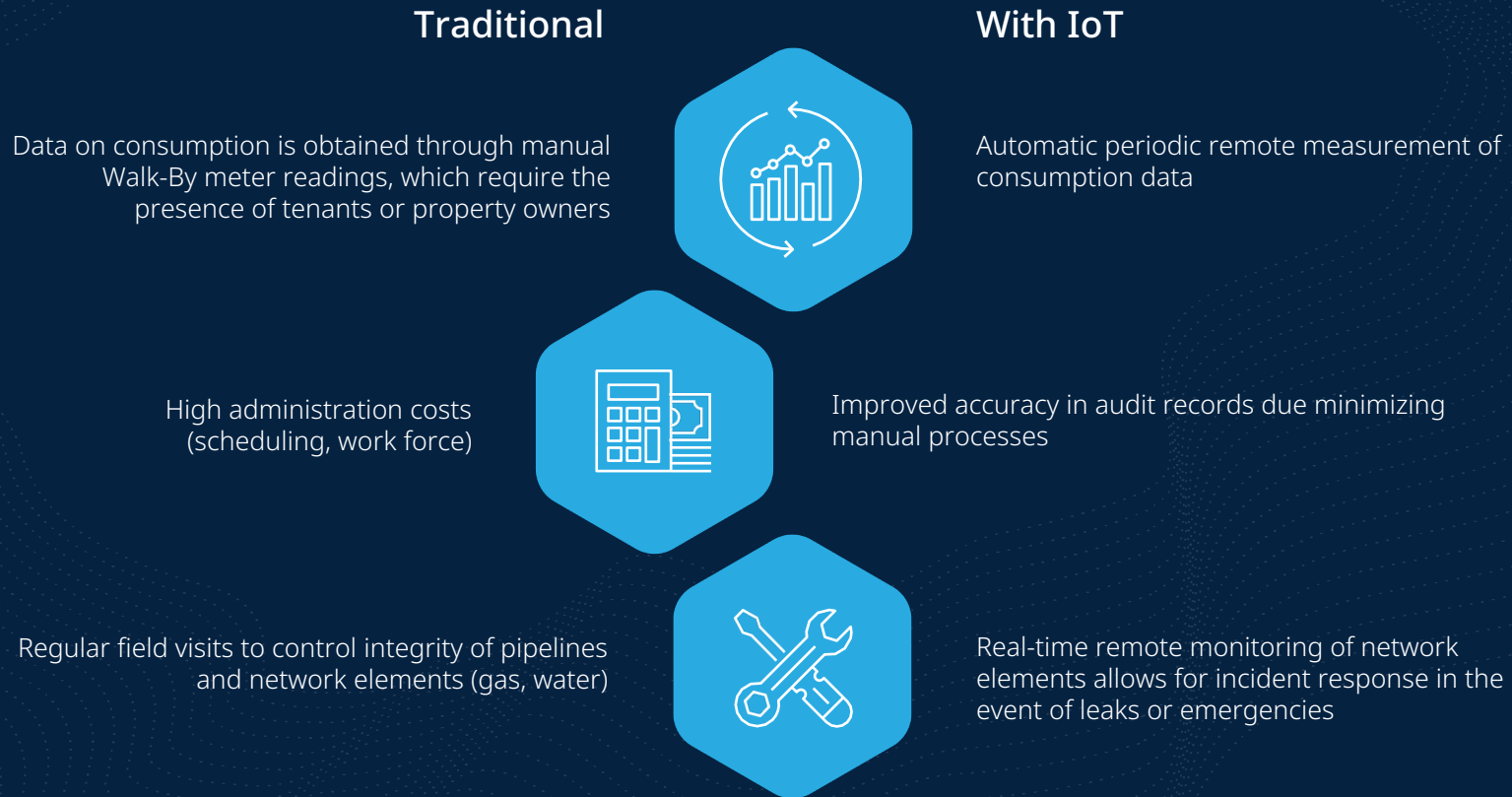# Smart Metering

Connectivity Playbook

Benefits of IoT for **Smart Metering**

IoT has progressed significantly in the last 10 years so how does this affect your smart metering?
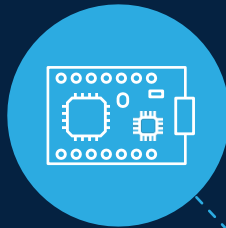
Traditional	With IoT
Data on consumption is obtained through manual Walk-By meter readings, which require the presence of tenants or property owners	Automatic periodic remote measurement of consumption data
High administration costs (scheduling, work force)	Improved accuracy in audit records due minimizing manual processes
Regular field visits to control integrity of pipelines and network elements (gas, water)	Real-time remote monitoring of network elements allows for incident response in the event of leaks or emergencies

Advantages of IoT along the **Value Chain**

While the benefits of IoT are clear, how will this directly affect your business?

Hardware and equipment manufacturers

Provide IoT components that guarantee interoperability and full functionality (e.g. includes reliable and licensed embedded connectivity option onto HW)

System integrators

Enable utility companies to optimize network and consumption monitoring

Tenants, building owner, occupants

Provide a transparent overview of energy consumption patterns and safe costs due to lower maintenances fees e.g., for meter reading services or repairs

Meter vendors

Equip meters with smart gateways that allow for remote consumption monitoring

Sub-metering companies

Enhance service portfolio by convenient remote metering services of energy consumption data

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An Overview of **IoT Applications**

Understanding the applications of IoT are important to ensure that you can connect to what you need.

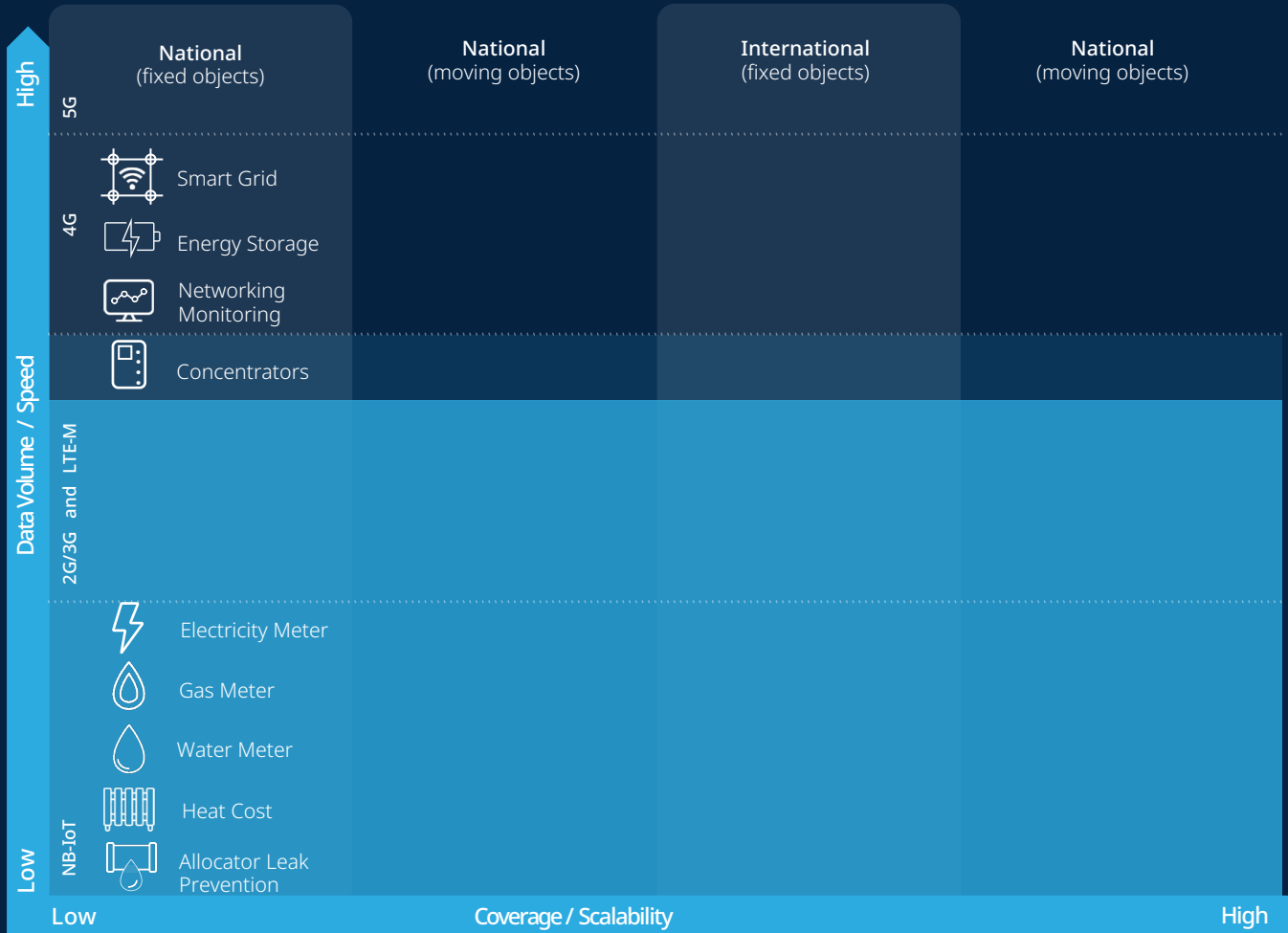| IoT Application	Transmission		Typical Data				Explanation
	↑ Send	↓ Receive	Status	Usage	Location	Updates	
Electricity Meter	↑			✓			Regular remote monitoring of electricity consumption data sent via smart meter gateway
Gas Meter	↑			✓			Regular remote monitoring of gas consumption data sent via smart meter gateway
Water Meter	↑			✓			Regular remote monitoring of water consumption data
Heat Cost Allocators	↑			✓			Regular remote monitoring of heat cost consumption data
Concentrators	↑		✓	✓			Receives consumption data from up to 250 metering devices and sends them to the server
Leak Prevention (Gas, Water)	↑	↓	✓		✓		Measures pressure and heat of gas and water pipelines to prevent emergencies
Energy Storage	↑	↓	✓	✓		✓	Remotely monitors and manage battery levels and energy production at local energy plants (PV, biogas plants, wind turbines, etc.)
Network Monitoring	↑	↓	✓	✓	✓		Monitors network infrastructure to prevent incidents and outages
Smart Grid	↑	↓	✓	✓			Optimizes network usage (voltage management, power factors) for stability

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Mapping Applications **Requirements**

To support your connectivity solutions, uncover what applications 1NCE can provide for your business.

■ Fully covered ■ Depends on use case

	National (fixed objects)	National (moving objects)	International (fixed objects)	National (moving objects)
Data Volume / Speed (High → Low) / 5G · 4G · LTE-M · 2G/3G · NB-IoT	Smart Grid			
	Energy Storage			
	Networking Monitoring			
	Concentrators			
	Electricity Meter			
	Gas Meter			
	Water Meter			
	Heat Cost			
	Allocator Leak Prevention			

Low ← **Coverage / Scalability** → High

Most common **connectivity types** within the use case:

PLC & 2G (GPRS)
- Provides a fast and reliable connectivity solution
- Widely available, well understood and trusted
- Suited for most meter reading applications
- 2G (GPRS) is most often used in the utility market

4G (LTE)
- Supports high bandwidth & low latency (as required by smart grid or energy storage)
- Use cases remain rare and are often still under development

NB-IoT
- Best option for use cases such as gas or water meters due to the requirement of deep indoor penetration and long lifetime cycles
- Will be fully available in most European countries within the next few years

LTE-M
- Comparable to NB-IoT
- Enables smart meter solutions
- Supports bandwidths up to 1 Mbit/s
- Optimized for deep indoor

Wireless M-Bus
- Used in metering projects
- Technology lacks scale which limits appeal

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1NCE Offering

1NCE is a perfect match with the Smart Metering solutions, meeting all basic requirements while addressing key challenges:

Requirements	Typical customer challenge	Why 1NCE is the best match?	Standard solutions
Data & Pricing	• All-in-1 solution • Cost transparency • Low & high data projects' support	• **All-in-1:** 10 EUR/10 years for connectivity & software • **One-time cost:** no monthly or hidden fees • **Lifetime Flat:** 500 MB, 250 SMS + extra **High Data IoT:** 5 EUR/GB, speed 25 Mb/s	• Complex & fragmented pricing, costly integrations • Monthly, fixed & hidden fees • No high-data requirements met
Coverage	• Global coverage • Cellular and LPWA radio technology • Multiple networks and operator switch	• **173 countries coverage;** no zoning or local pricing discrepancies • Integration with **LPWA networks** • **Freedom-to-Switch** to change providers without replacing a SIM	• Region or zone-restricted coverage • NB-IoT and LTE-M limitations (10-20 networks globally) • Complex contracts and vendor lock-in
Services	• Device control through one interface • Interoperability with 3rd party services	• **Device monitoring and management** included • **3rd party software,** like Datacake, Mender, Microsoft Azure, natively integrated with 1NCE OS and CMP	• Extra costs for monitoring & data management • Limited compatibility with third-party IoT software
Longevity	• Supports emerging technologies • Ability to switch operators • Services are liable for the device lifecycle	• **NB-IoT or LTE-M** for devices with lifecycle of 10+ years • **eSIM (eUICC)** for flexible, multi-operator functionality • **Reliable cellular-based networks** & Tier 1 operators	• Limited LPWA, especially in challenging environments • Extra costs due to network or service changes • Short-term contracts and pricing models

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The 1NCE **Promise**

Simplify your value chain with **an all-inclusive model** and additional features & services.

1NCE **All-in-One** Solution

1NCE IoT **Lifetime Flat**
10 EUR for 10 years lifetime subscription

1NCE Connect

- ✓ 500 MB, **250** SMS
- ✓ **173 countries** coverage
- ✓ **NB-IoT, LTE-M**, 2G, 3G, 4G
- ✓ Connectivity management platform
- ✓ **Unlimited** API usage
- ✓ VPN, APN **included**

1NCE OS

- ✓ Device Authentication
- ✓ Energy Saver
- ✓ Device Inspector
- ✓ Device Locator
- ✓ Device Integrator
- ✓ Freedom-to-Switch

1NCE **SIM Card**
depending on the application

- + IoT SIM **Card Business** 1 EUR
- + IoT SIM **Card Industrial** 2 EUR
- + IoT SIM **Chip Industrial** 2.50 EUR

Extra Services

Top-up Option
when a device reaches data limits in 10+ years

- + Extra 500 MB & **250** SMS **for 10 EUR**

Lifetime **Extension**
for those who want to exceed 10 years

- + Extra 10 years **for 10 EUR**

1NCE **Plugins**
available to trial **for free**

- + **FOTA** by Mender
- + **Data Visualization** by Datacake
- + **Azure IoT Integration** by Tartabit
- + **Device Debugging** by Memfault

Alternative Products

1NCE **High Data IoT**
for projects with high data requests

- + **5 EUR/GB**, speed 25 MB/s

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About **1NCE**

Delivering **IoT software and connectivity** for life.

1NCE is a company offering a software platform for connected products that delivers future-proof, hassle-free IoT in 173 countries and regions. The software platform enables customers to easily, securely and reliably collect device data and turn it into actionable intelligence. This accelerates time-to-market for data collection projects by months, increases device lifetime by years, and allows efficient management of sensors from initial deployment to the end of the product lifecycle. More than 23,000 users and 60 Fortune 500 companies trust 1NCE with 30 million connected products worldwide.

With 20%, unsurprisingly utility customers mark the biggest share of the 1NCE customer base. Currently, we manage IoT projects for Utilities in more than 95 countries worldwide.

1NCE Shop

Customer References

Contact Us

Knowledge Base