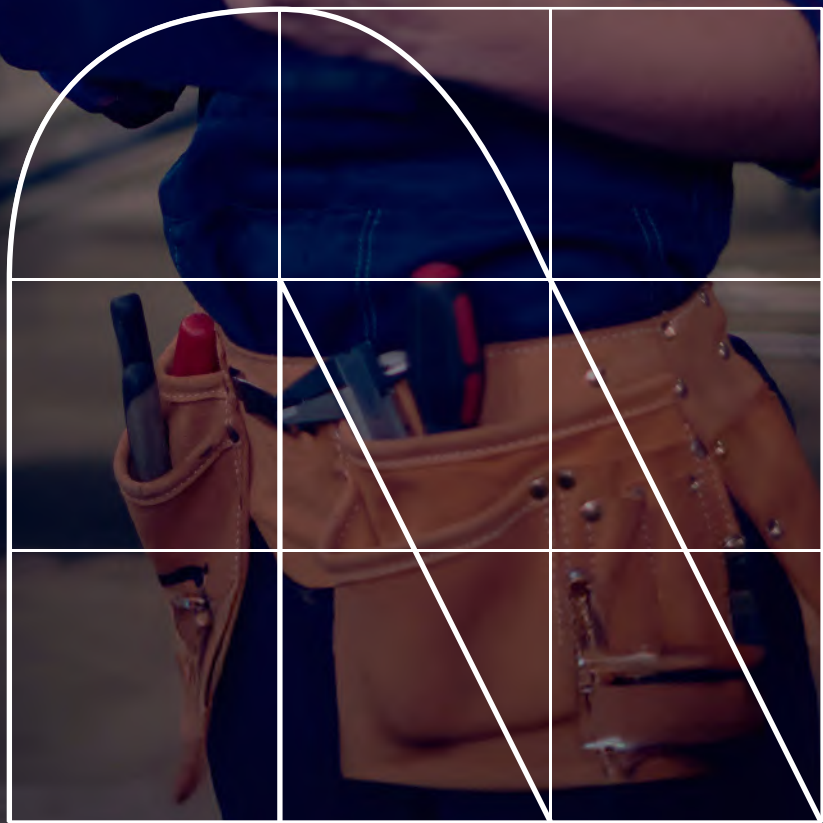


# Connected worker

How are new technologies enhancing  
the operations of the workers in the field



# Introduction

**In the evolving landscape of Industry 5.0, the concept of the “Connected Worker” has become a cornerstone in the modernization of industrial operations.**

This paradigm shift leverages digital tools and mobile devices to enable field workers to seamlessly integrate with machines, processes, and their peers. Such integration not only streamlines the execution of standard tasks but also enhances communication and operational efficiency.

The advent of digital technologies, including augmented reality (AR), artificial intelligence (AI), the Internet of Things (IoT), Digital Twins, and industrial connectivity, is revolutionizing the way workers interact with their environments. These technologies empower workers with real-time access to critical information, foster remote collaboration, and significantly improve workplace safety.

The implementation of Connected Worker solutions is transforming industrial operations by providing a robust framework for visualizing, consuming, and communicating actionable information. This transformation is not merely an incremental improvement but a fundamental shift towards a more efficient, safe, and collaborative industrial ecosystem.

As industries continue to embrace digital transformation, the role of the Connected Worker becomes increasingly vital. By equipping workers with advanced digital tools, organizations can ensure that their workforce is more agile, informed, and capable of responding to dynamic operational demands. This shift not only enhances productivity but also fosters a culture of continuous improvement and innovation.

Moreover, the integration of Connected Worker technologies supports the development of a more resilient and adaptable workforce. In an era where remote work and decentralized operations are becoming the norm, these technologies enable workers to maintain high levels of performance and collaboration, regardless of their physical location.

This flexibility is crucial in navigating the complexities of modern industrial environments.



**Finally, the adoption of Connected Worker solutions underscores the importance of data-driven decision-making in industrial operations. By harnessing the power of real-time data and analytics, organizations can gain deeper insights into their processes, identify areas for improvement, and make informed decisions that drive operational excellence. This data-centric approach not only optimizes performance but also enhances the overall safety and well-being of the workforce.**

# Overview

**Connected Worker solutions in the Utilities sector is to create a seamless and integrated work environment where workers can access real-time information, collaborate remotely, and perform tasks more efficiently. This vision aligns with the broader goals of Industry 5.0, which emphasizes human-centric and sustainable industrial practices. By leveraging digital tools, organizations aim to empower their workforce, improve operational efficiency, and enhance overall productivity.**

Currently, many utilities companies are in the early stages of adopting Connected Worker solutions. While some organizations have successfully implemented these technologies, others are still exploring their potential. The adoption rate varies across sectors, with energy and utilities being among the early adopters. The focus is on integrating digital tools into daily operations to streamline processes, reduce downtime, and improve safety.

One of the main challenges in implementing Connected Worker solutions is managing technological change. Organizations need to ensure that their workforce is adequately trained and have the capability to adapt to the use of new technologies and that there is a smooth transition from traditional methods. Cybersecurity and data privacy concerns also pose significant challenges, as the increased use of digital tools can expose organizations to potential threats.

**The primary objectives of Connected Worker initiatives in the Utilities sector include:**

- Productivity and efficiency by providing real-time access to information and tools;
- Safety by using technologies such as AR for training and hazard identification;
- Remote collaboration and communication to ensure seamless operations;
- Data analytics to make informed decisions and optimize processes.

Several barriers can hinder the successful implementation of Connected Worker solutions in the Utilities sector. These include resistance to change from workers who are accustomed to traditional methods, mix of employees and third party resources, the high cost of implementing new technologies, and the need for robust infrastructure to support digital tools.



# Our approach to the connected worker.

**NTT DATA is committed to enhancing the operations of field workers through the implementation of advanced digital tools and technologies. Our approach focuses on the worker and the possibility of having tools that support and accelerate their activities, ensuring that information from field force activities, asset management, time management, enterprise collaboration tools, IoT devices, and other essential systems are centralized to create a seamless and efficient work environment.**

NTT DATA offers a comprehensive suite to support the connected worker, including field services tools designed to improve the productivity and efficiency of field workers. These tools are integrated with various systems to provide a holistic solution:

- **Asset management:** Tools that help track and manage assets in real-time, ensuring that field workers have access to the necessary equipment and resources.
- **Time management:** Solutions that enable efficient scheduling and time tracking, ensuring that field workers can manage their tasks effectively.
- **Enterprise collaboration tools:** Integration with enterprise collaboration tools allows for better communication and collaboration among field workers and office staff.
- **IoT devices:** Integration with IoT devices provides real-time data and insights, helping field workers make informed decisions and improve their performance.

Artificial Intelligence (AI) plays a crucial role in the Connected Worker ecosystem. AI-driven tools and technologies enhance the capabilities of field workers by providing predictive analytics, automated workflows, and intelligent decision-making support such as:

- **Predictive maintenance:** AI can analyze data from IoT devices to predict equipment failures before they occur, allowing for proactive maintenance and reducing downtime.
- **Enhanced safety:** AI-powered systems can monitor work environments in real-time, identifying potential hazards and alerting workers to take preventive measures.
- **Improved efficiency:** AI can automate routine tasks, freeing up workers to focus on more complex and value-added activities.
- **Data-driven insights:** AI can process vast amounts of data to provide actionable insights, helping organizations optimize their operations and make informed decisions.

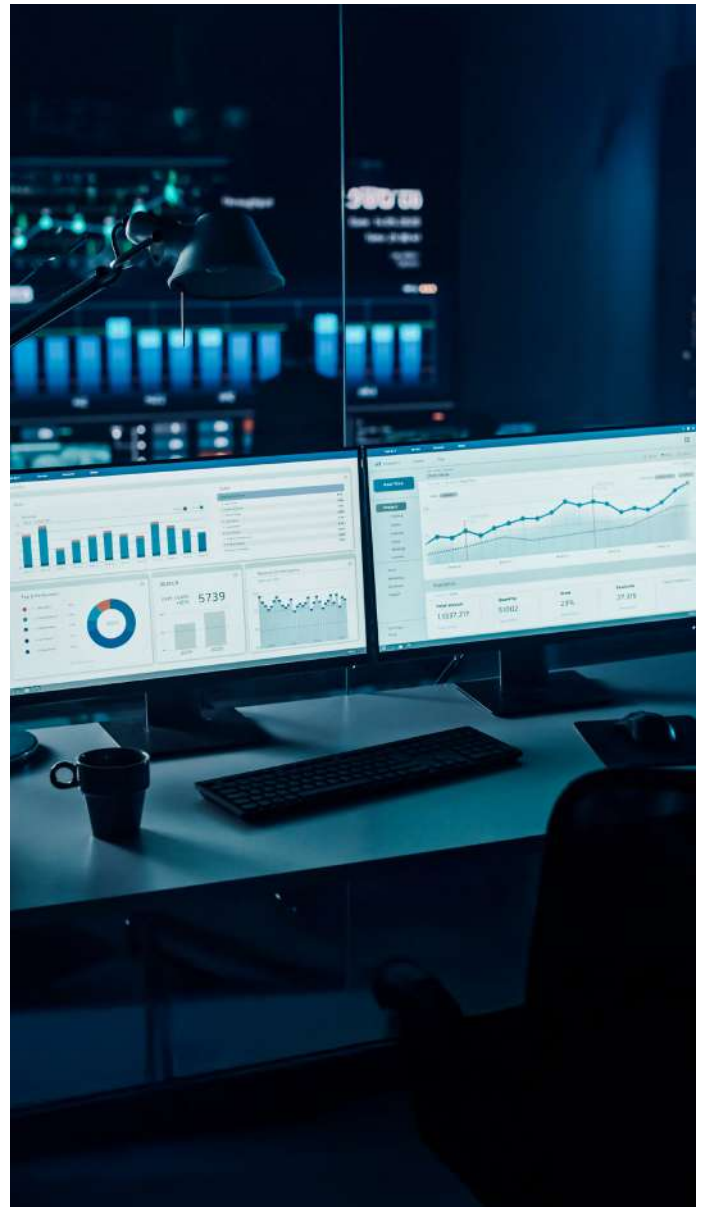


Considering the current experience in this context, NTT DATA's knowledge of business processes is essential to ensure efficiency and effectiveness across the entire value chain in the utilities sector. This experience in understanding and optimizing business processes is crucial for the successful implementation of Connected Worker solutions. The company uses a holistic approach to analyze and improve processes, ensuring that all areas of the organization are aligned and functioning efficiently.

Our current technological experience includes the knowledge in field services tools, business analytics solutions, IoT technologies, asset management systems, and AI solutions to provide predictive analytics and decision support.

For the successful implementation and adoption of Connected Worker solutions, NTT DATA emphasizes the importance of change management. This involves:

- **Training and support:** Ensuring that field workers are adequately trained to use new technologies and providing ongoing support to address any issues that may arise.
- **Stakeholder engagement:** Involving all relevant stakeholders in the implementation process to ensure that their needs and concerns are addressed.
- **Communication:** Maintaining open and transparent communication throughout the implementation process to keep everyone informed and engaged.
- **Monitoring and evaluation:** Continuously monitoring the implementation process and evaluating its effectiveness to make necessary adjustments and improvements.



**NTT DATA has the capability, through its team and methodology, to address the challenges in this context. By focusing on these key areas, NTT DATA aims to ensure the successful adoption of Connected Worker solutions, leading to improved productivity, efficiency, and overall performance in the field.**

Additionally, NTT DATA's extensive experience in the utilities sector allows us to understand the unique challenges and requirements of this industry. Our team of experts is well-versed in the latest technologies and methodologies, ensuring that we can provide tailored solutions that meet the specific needs of our clients. We also prioritize sustainability and environmental responsibility in our projects, helping our clients achieve their sustainability goals while improving operational efficiency.

Furthermore, NTT DATA's commitment to innovation drives us to continuously explore new technologies and approaches to enhance our Connected Worker solutions. We invest in research and development to stay ahead of industry trends and deliver cutting-edge solutions that provide real value to our clients. Our collaborative approach ensures that we work closely with our clients to understand their needs and deliver solutions that exceed their expectations.



# Best practices around connected worker ecosystem

**In the rapidly evolving world of work, frontline employees often face unique challenges as they strive to deliver exceptional service while navigating the demands of an increasingly digital landscape. Transforming their workplace is not just a necessity—it is an opportunity to empower these vital contributors, ensuring they have the tools, skills, and processes needed to thrive.**

At NTT DATA, we have developed a comprehensive approach to addressing these challenges, leveraging our expertise to deliver tailored solutions that drive meaningful change. Our methodology focuses on understanding the specific needs of each organization, co-creating strategies with our clients, and implementing scalable solutions that prioritize the success of their frontline workforce. Central to this approach is the concept of the “connected worker,” a digitally empowered employee who seamlessly integrates technology, data, and collaboration into their daily tasks.

Successful workplace transformations are built on three critical pillars: transforming processes, retooling technology, and boosting talent. Together, these elements create a robust foundation for organizations seeking to support their frontline workforce effectively.

## Transform processes

To unlock the full potential of frontline workers, organizations must first reimagine their processes. Streamlined and efficient workflows can improve not only productivity but also employee satisfaction. Here are key areas of focus:

- **Enhancing Collaboration and Communication:** Seamless communication channels are the backbone of a connected workforce. Introducing tools like real-time messaging platforms, mobile apps, and shared dashboards ensures that frontline employees can easily access information, connect with their teams, and receive timely updates.
- **Delivering Outstanding Customer Experiences:** Empowering employees with the right data and insights allows them to anticipate customer needs and deliver personalized services. This might include integrating customer relationship management (CRM) systems or utilizing AI-driven tools to analyze and predict customer behaviors.
- **Supporting Day-to-Day Activities with Data:** Data-driven decision-making can significantly enhance operational efficiency. Equipping workers with mobile devices that provide real-time metrics, inventory levels, and performance tracking enables them to make informed decisions on the go.

**At NTT DATA, we work closely with organizations to map their current workflows, identify inefficiencies, and implement tailored process improvements that align with their strategic goals. Our solutions are designed to enable the connected worker, empowering employees with the tools and insights they need to perform at their best.**

## Retool Technology

Frontline workers often operate in environments where outdated or insufficient technology can hinder their effectiveness. Addressing these gaps is essential to improving productivity, user experience, and safety:

- **Addressing Current Technology Gaps:** Assess existing systems to identify areas for improvement. Replace legacy software and hardware with modern, intuitive solutions that align with employees' needs.
- **Improving Productivity and User Experience:** User-friendly tools not only boost efficiency but also reduce frustration. For example, deploying mobile apps tailored for specific tasks can simplify workflows and enable employees to focus on high-impact activities.
- **Ensuring Health and Safety:** In industries where physical tasks dominate, wearable technology, IoT sensors, and AI-driven safety protocols can proactively identify risks, safeguard employees, and promote a healthier work environment.

**At NTT DATA, our technology retooling initiatives are grounded in a deep understanding of our clients' operational challenges. We design and implement cutting-edge solutions that are not only effective but also intuitive, ensuring high adoption rates and lasting impact. These technologies are essential for enabling the connected worker, ensuring seamless integration between digital tools and everyday tasks.**



## Boost talent

Technology and processes are only as effective as the people who use them. By investing in talent, organizations can ensure that their workforce is prepared to embrace change and drive innovation:

- Providing Training and Support Systems for Technology Adoption:**  
 Comprehensive training programs help employees master new tools and systems. Consider incorporating hands-on workshops, e-learning modules, and on-the-job coaching to accelerate adoption.
- Integrating Ongoing Learning and Development:**  
 Learning doesn't stop after initial training. Establishing continuous education programs, mentorship opportunities, and career development pathways encourages employees to grow with the organization.
- Ensuring Successful Knowledge Transmission:**  
 Knowledge sharing is crucial, especially when experienced workers transition out of their roles. Implementing structured handover processes and digital knowledge repositories ensures that critical insights are preserved and passed on to the next generation.

At NTT DATA, we prioritize people-centric transformation. Our programs are designed to foster a culture of continuous learning and development, ensuring that employees not only adapt to change but also thrive in it.

**By leveraging innovative training methods and knowledge-sharing platforms, we empower teams to unlock their full potential. This focus on development is key to supporting the connected worker, who thrives in an environment of ongoing growth and digital fluency.**

“ Frontline workers across various industries face multifaceted challenges that demand innovative solutions. In the utilities sector, these challenges are particularly pronounced, spanning health and safety, operational efficiency, and employee engagement. Recognizing these hurdles is the first step toward crafting impactful strategies.”

## Addressing industry challenges with practical solutions

Frontline workers in the utilities sector face numerous health and safety challenges, including exposure to hazardous materials, fatigue-related accidents, compliance with safety protocols, and physical strain. Operational efficiency is also a concern, with challenges such as equipment downtime, asset failure, and complex decision-making. Additionally, engagement and motivation among frontline workers can be limited by isolation, lack of collaboration, and insufficient recognition.

To address these challenges, there are several opportunities that organizations can explore:

- **Enhancing safety:**

Implementing real-time monitoring systems, digital communication platforms, and automated emergency response tools can significantly improve the safety of frontline workers. These technologies enable proactive identification of hazards and ensure rapid response to incidents, fostering a safer work environment.

- **Improving operational efficiency:**

Predictive maintenance technologies, digital workforce management systems, and process automation can help reduce equipment downtime and streamline complex decision-making. By integrating these tools, organizations can optimize asset utilization and minimize disruptions.

- **Boosting engagement and motivation:** Knowledge sharing is crucial, especially when experienced workers transition out of their roles. Implementing structured handover processes and digital knowledge repositories ensures that critical insights are preserved and passed on to the next generation.

**By leveraging these opportunities, companies can create a safer, more efficient, and engaging work environment for their frontline workers.**

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NTT DATA, we bring these solutions to life by tailoring them to the unique needs of each organization, ensuring measurable impact and sustainable growth.”



Below, we will explore some recent projects where NTT DATA address frontline workers challenges:



NTT DATA developed a solution to boost the efficiency of field operators at the sites of a **leading energy company in Spain**. It includes a cross-platform application that improves the agility and quality of daily reports. With this tool, workers can perform their tasks from any location, solving connectivity issues. The app streamlines professional workflows by organizing relevant information and fostering a collaborative environment. Its implementation has resulted in more efficient and agile operations, improving industrial performance and enabling shift change notifications. It has also simplified task logging and technician assignment.



In this project, the team faced the challenge of monitoring worker safety at a refinery operated by a **prominent Spanish company in refining and energy distribution**, aiming to predict risk trends and identify signs of fatigue. Since there was no system in place to track cognitive and emotional readiness, NTT DATA leveraged data analytics to predict workplace accidents and improve the work environment. The analyzed data allowed for the evaluation of different technological alternatives, successfully maximizing employee efficiency and meeting the specific needs of field operators.



NTT DATA developed a solution for a Portuguese utility to improve employee compliance with Personal Protective Equipment (PPE) usage, aiming to minimize risks and prevent accidents. The team created an Android mobile app that uses a camera to automatically validate PPE, recording its use offline. The app employs a neural network trained on over 44,500 images from 103 videos filmed with NTT DATA personnel wearing various safety gear, including helmets and gloves. To enhance the model's accuracy, field teams will continue collecting real-life videos. The solution has successfully integrated the detection of defined PPE, reduced false positives, and will expand to handle new scenarios, such as helmets with visors.



NTT DATA developed a hands-free vocal assistant using Azure OpenAI services to enhance workplace safety and efficiency. This solution was implemented in collaboration with a **multinational energy company with a presence in Europe**. The virtual assistant integrates with domain microservices to provide real-time business data, allowing operational staff to access information and perform tasks without physical interaction. Designed for Android smartphones, the solution ensures that staff can focus on their tasks safely, minimizing the risk of accidents. Key outcomes include a single point of access to customer service functionalities, hands-free use of mobile devices during data consultation and updates, and emergency assistance.



NTT DATA developed an immersive virtual reality (VR) solution to train turbine maintenance personnel, in collaboration with a **Spanish energy company operating in the renewable energy sector**. This solution eliminated the need to halt operations for training and reduced safety risks during the process. The VR experience prepares personnel to carry out unloading procedures before visiting wind farms, ensuring efficient and risk-free learning. Development time: 9 weeks, with 100% potential reusability.

Finally, and equally important, it is essential to highlight the role of Artificial Intelligence (AI) in the Connected Worker ecosystem. AI-driven tools and technologies enhance the capabilities of field workers by providing predictive analytics, automated workflows, and intelligent decision-making support. For example, AI enables:

- **Predictive Maintenance:** AI analyzes data from IoT devices to predict equipment failures before they occur, allowing for proactive maintenance and reducing downtime.
- **Enhanced Safety:** AI-powered systems monitor work environments in real time, identifying potential hazards and alerting workers to take preventive measures.
- **Improved Efficiency:** AI automates routine tasks, freeing up workers to focus on more complex and value-added activities.
- **Data-Driven Insights:** AI processes vast amounts of data to provide actionable insights, helping organizations optimize operations and make informed decisions.

**In conclusion:**

transforming the workplace for frontline workers is a journey that requires a holistic approach, blending innovative processes, cutting-edge technology, and robust talent development. At NTT DATA, we believe in partnering with our clients to co-create solutions that drive sustainable growth and success. By focusing on these three pillars and embracing the vision of the connected worker, organizations can create a thriving environment where frontline employees feel empowered, valued, and equipped to excel.

**The result? A workforce ready to tackle challenges, deliver exceptional results, and drive long-term success.**

# Analysts reports and key insights.

**Connected Worker solutions are transforming the operations of field workers through the implementation of advanced digital tools and technologies. According to analysts from Gartner, McKinsey, Everest, Forrester, and BCG, these solutions are highly effective and innovative, excelling in several critical areas.**

Gartner highlights that field service management (FSM) software suites are essential for field service providers (FSPs) who send technicians to customer locations for installation, repair, inspection, and maintenance services. Gartner notes that FSM tools are designed to improve the productivity and efficiency of field workers by integrating with various systems to provide a holistic solution.

In the Magic Quadrant for Analytics and Business Intelligence Platforms, Gartner emphasizes the importance of business analytics solutions in helping organizations analyze data and provide insights to improve operational efficiency. These platforms enable organizations to make data-driven decisions, optimize processes, and enhance overall performance.

The Internet of Things (IoT) is transforming industries by providing real-time data and insights. Gartner highlights that IoT implementations involving digital twins are useful in reducing costs and improving situational awareness. IoT technologies enable organizations to monitor and manage assets in real-time, leading to better decision-making and improved performance.

Effective asset management is crucial for ensuring that field workers have access to the necessary equipment and resources. Gartner reports that asset management systems help track and manage assets in real-time, ensuring that field workers can perform their tasks efficiently in order to guarantee and maintain operational continuity and reducing downtime.

Artificial Intelligence (AI) plays a crucial role in enhancing the capabilities of field workers. Gartner highlights that AI-driven tools and technologies provide predictive analytics, automated workflows, and intelligent decision-making support. AI can analyze data from IoT devices to predict equipment failures, monitor work environments for potential hazards, and automate routine tasks, freeing up workers to focus on more complex activities.



McKinsey emphasizes the importance of multi-dimensional change across strategy, talent, operating model, technology, and data.

Everest Group highlights the role of technology in enabling sustainability and the importance of strategic partnerships in driving sustainability initiatives. Everest Group's research indicates that enterprises are extensively collaborating with service providers on ESG data reporting, compliance management, and net zero strategy development.

Forrester's evaluation of digital transformation service providers emphasizes the importance of business strategy, business model innovation, emerging technologies, and organizational change management. Forrester recognizes the capabilities of leading firms in these areas and their ability to drive enterprise transformation through insight-driven program management and global delivery strategies.

Extensive experience in the utilities sector allows companies to understand the unique challenges and requirements of this industry. Teams of experts are well-versed in the latest technologies and methodologies, ensuring that they can provide tailored solutions that meet the specific needs of their clients. Prioritizing sustainability and environmental responsibility in projects helps clients achieve their sustainability goals while improving operational efficiency.

For the successful implementation and adoption of Connected Worker solutions, the importance of change management is emphasized. This involves training and support, stakeholder engagement, communication, and continuous monitoring and evaluation. By focusing on these key areas, the aim is to ensure the successful adoption of Connected Worker solutions, leading to improved productivity, efficiency, and overall performance in the field.

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**References:** Gartner, "Field Service Management Reviews and Ratings," 2024. / Gartner, "Magic Quadrant for Analytics and Business Intelligence Platforms," 2024. / Gartner, "Internet of Things (IoT) - Key Business Insights," 2024. / Gartner, "Asset Management Systems," 2024. / Gartner, "Deliver Business Value Through AI Services and Solutions," 2023.

# Energy trends and our global vision about connected worker.

At NTT Data we are continuously analyzing the investments made by large corporations and Energy VCs and interacting with the innovation ecosystem, providing valuable insights on the leading solutions and those that will shape the future of the energy industry.



Since 2017 we have been tracking these investments and generated an investment database with information collected from public sources and characterized by a team of consultants.

Between 2022 and 2024, **52 investment operations** have been recorded involving startups within the domain of the Connected Worker.

These operations constitute approximately **8% of the total number of investment operations** carried out during the period, although they represent only **3.8% of the overall capital invested** in the market.

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The average investment per Connected Worker operation amounts to \$40 million, which is comparatively lower than investments in other domains, where the average is \$90 million.”

With regard to who is investing in the Connected Worker domain, we can observe that it is a **transversal need for the whole energy sector** where in both Utilities and Oil and Gas there is a large activity of field work operations and where providing solutions to optimize them and **maximize the safety of the operators is a top priority**. In both terms on number of operations and investment amount there is a homogenous distribution between the 3 macro sectors, with the Oil & Gas Player leading the investments, especially in terms of investment amount, where they contribute 40% of the total investment in this domain.

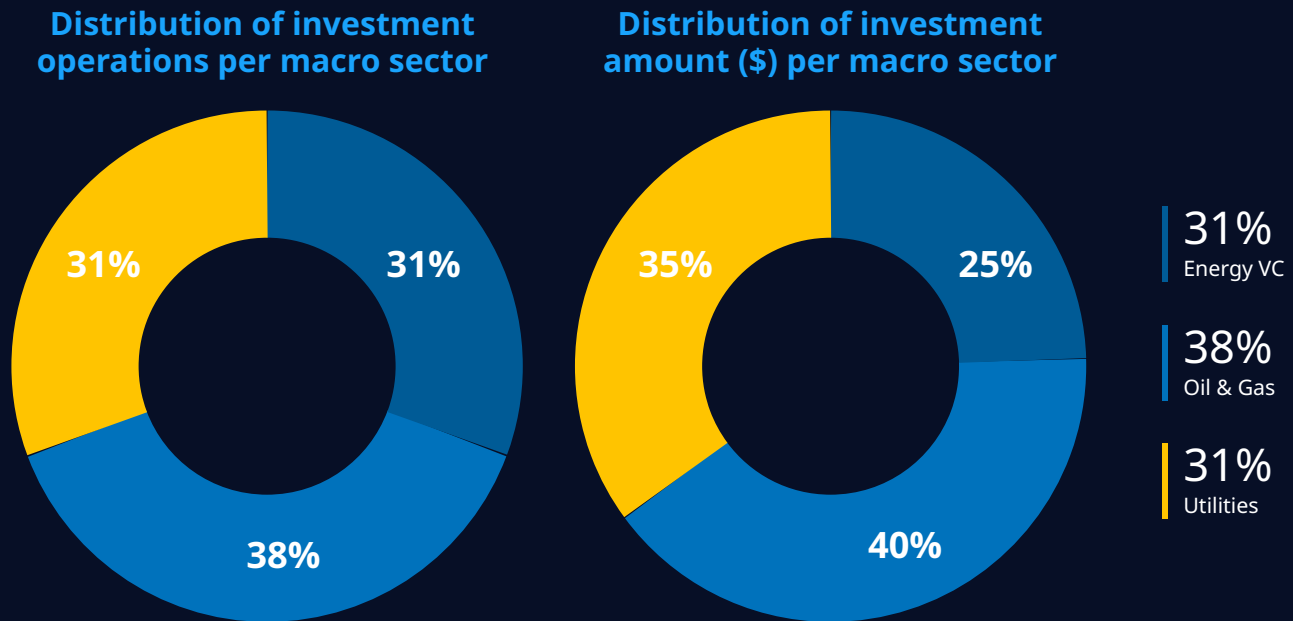


Figure 1. Distribution of the number of operations and the amount invested between the 3 macro sectors

In terms of who is leading the investments we have a representative of each macro sector in the Top 5, which further demonstrates that this is a transversal domain. This being said, there is a general consensus from all the analysis that **the importance for the Oil and Gas sector is even more pronounced with 3 of the top 5 investors coming from that macro sector**.

This observation can be due to the specific circumstances of the Oil & Gas sector which make optimizing the field work even more important:

- **Fieldwork often involves dangerous conditions**, such as high pressures, extreme temperatures, and the presence of flammable substances for which providing solutions which avoid exposing or provide the required information to reduce the risk to the field worker are vital.
- **The sector faces fluctuating oil prices** where the product breakeven point is critical for the profitability of the company, and as such any operational efficiency that can be gained provides an additional competitive advantage.
- **With an aging infrastructure** digital solutions help manage and operate older infrastructure reliably and efficiently.
- **There is a skilled workforce shortage**, for which enhanced operations can reduce dependency on highly specialized roles by automating complex tasks or democratizing the required knowledge.

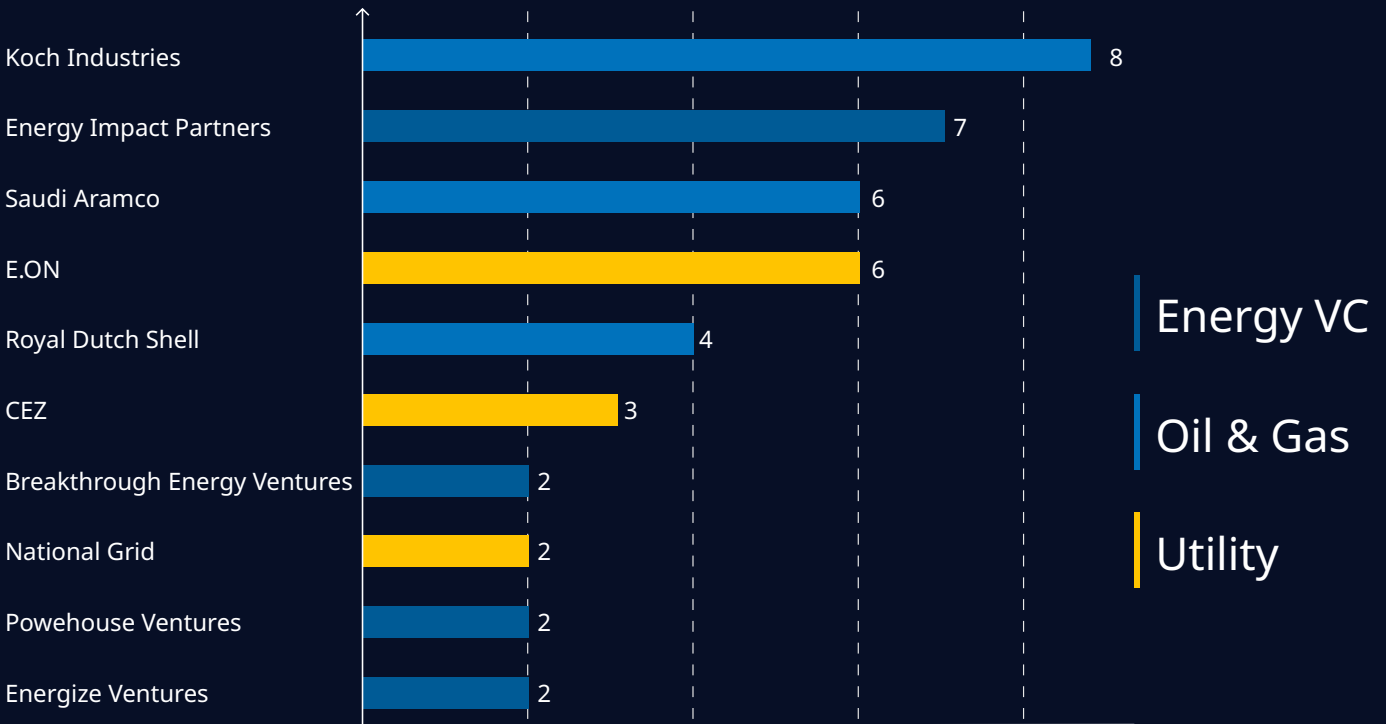


Figure 2. Top 10 investors in the Connected Worker domain in terms of number of operations



The investments in this domain are focused on **creating digital tools and platforms that facilitate communication, data management, and real-time decision-making.** Connected Worker solutions integrate wearable technologies, IoT sensors, augmented reality (AR), and data analytics into employees' daily activities. These tools enable workers to receive real-time instructions, access relevant information on their devices, collaborate remotely, and mitigate risks through monitoring and alert systems. In addition, this domain also **captures investments in connectivity** since in the energy sector there are a large amount of operations that occur in remote areas, refineries, oil rigs, large expanses of the transmission and distribution network... where the digital solutions require additional connectivity to function correctly.

The emphasis on Connected Worker solutions aligns with the broader objectives of Industry 4.0, where the **interconnection of people, equipment, and systems is paramount.** The Startups are developing platforms that integrate cutting-edge technologies such as artificial intelligence (AI), machine learning (ML), and big data to process vast quantities of information and generate actionable insights. The versatility of these platforms allows their deployment across diverse environments, ranging from automated manufacturing facilities to construction sites, thereby enhancing both operational efficiency and employee experience.

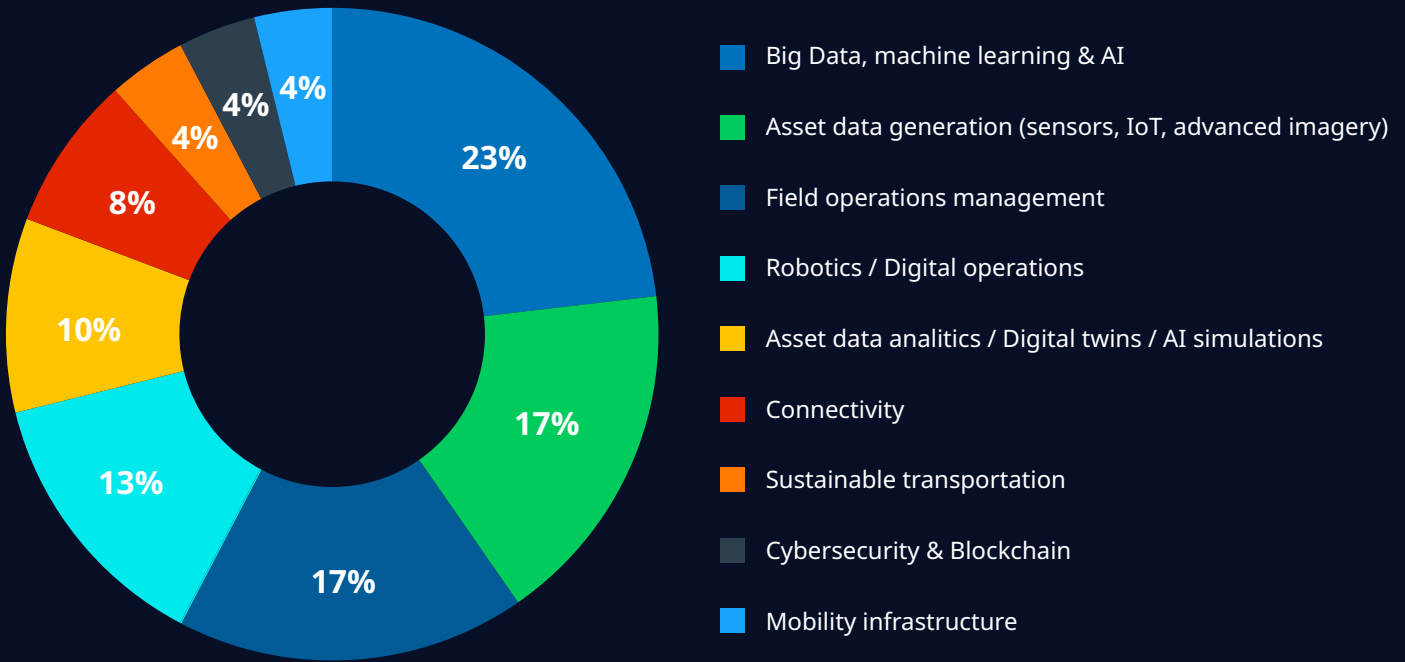


Figure 3. Investment fields within the Connected Worker domain

Some of the most notable startups within the Connected Worker domain are:

- **Weavix**, a plug and play solution used to connect workers through **communication and data** to transform frontline engagement and efficiency at scale. They offer a **digital device for the frontline workers** which serves as a single device for all communications, safety alerts, and operation information.
- **Deepomatic** is a visual automation platform that helps organizations and businesses with **computer vision applications**. The company enables field operation companies to turn **workers' smartphone camera footage into actionable insights**. Its intuitive SaaS platform assists field service workers thanks to the automatic detection of any key aspect of the field. All data collected from the field is used by field service organizations to have a complete view of their operations and infrastructure.
- **Beekeeper** is a **mobile-first communication platform** that reaches every shift, location, and language through real-time messaging and targeted streams. Managers keep frontline teams productive and turnover low by automating workflows while leveraging an analytics dashboard to measure engagement.
- **OQ TECHNOLOGY** aims to **disrupt the satellite telecommunication industry and provides the world's first universal plug & play "Internet-of-Things" solution** that can provide connectivity anywhere. Whether this is digital oilfield applications, offshore monitoring, SCADA applications, asset tracking, fleet management, smart metering, or predictive maintenance: they provide an innovative low-cost connectivity solutions.
- **Oriient** pioneer **accurate, software-only indoor location services leveraging Earth's magnetic field and proprietary deep learning technology**. Powering mobile apps with indoor location services, using a scalable and easy to deploy solution that does not require hardware. Oriient provides users with highly accurate navigation on their own smartphones, and allows facilities to improve their service, space utilization, staff performance and operations.

# Conclusions and next steps

**In conclusion, the concept of the Connected Worker is revolutionizing the way field operations are conducted, particularly in the context of Industry 5.0.**

By leveraging advanced digital tools and technologies such as augmented reality (AR), artificial intelligence (AI), the Internet of Things (IoT), Digital Twins, and industrial connectivity, organizations can significantly enhance the efficiency, safety, and productivity of their field workers. These technologies enable real-time access to critical information, promote remote collaboration, and facilitate the seamless integration of workers with machines, processes, and other team members.

The adoption of Connected Worker solutions is still in its early stages for many utilities companies, but the potential benefits are clear. These solutions align with the broader goals of Industry 5.0, emphasizing human-centric and sustainable industrial practices. By providing real-time access to information and tools, improving safety through technologies like AR, enabling remote collaboration, and utilizing data analytics for informed decision-making, Connected Worker initiatives aim to create a more efficient and productive work environment.

To successfully implement and adopt Connected Worker solutions, a holistic approach is essential. This includes focusing on change management, providing ongoing training and support, engaging stakeholders, maintaining open communication, and continuously monitoring and evaluating the implementation process. By addressing these key areas, organizations can ensure the successful adoption of Connected Worker solutions, leading to improved productivity, efficiency, and overall performance in the field.

However, the implementation of these solutions is not without challenges. Organizations must manage technological change, ensure adequate training for their workforce, and address cybersecurity and data privacy concerns. Overcoming resistance to change, managing the high costs of new technologies, and establishing robust infrastructure are also critical barriers that need to be addressed.

The insights from analysts such as Gartner, McKinsey, Everest, Forrester, and BCG underscore the transformative potential of Connected Worker solutions. These solutions are recognized for their ability to enhance field operations through the integration of advanced technologies, driving enterprise transformation, and promoting sustainability. By staying ahead of industry trends and continuously exploring new technologies and approaches, organizations can deliver cutting-edge solutions that provide real value to their clients and achieve their sustainability goals while improving operational efficiency.

**In summary, the Connected Worker represents a significant advancement in industrial operations, offering a pathway to a more integrated, efficient, and sustainable future. By embracing these technologies and addressing the associated challenges, organizations can unlock the full potential of their workforce and achieve greater success in their field operations.**

