



White Paper  
Operational Excellence with  
Real-Time Dynamic Risk Management



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## Introduction

### The Value of Operational Excellence

According to [Forrester](#), organizations within heavy industries are turning to digital to resolve issues around productivity, operational capability and asset efficiency. Defined as digital operational excellence (DOX) this is a strategic move towards digital solutions and services that help organizations to transform traditionally complex operational issues and deliver long-term measurable value.

How? By ensuring that the organization has access to data and insights that can be used to better serve the business and the employee. By pulling on the threads of connectivity, data, analytics, and intelligence to create cohesive ecosystems that can adapt and evolve alongside changing markets and business needs. And by ensuring that the organization has the tools it requires to achieve predictive maintenance through proactive resource management, artificial intelligence and machine learning.

As Forrester points out, the sector has clearly made significant digital strides over the past few years, using the potential of Industry 4.0 and the ubiquity of the Internet of Things (IoT) to create uniquely capable systems and platforms. However, digital goes beyond broad strokes and huge investments and into the cracks and corners of the business as it: leverages data for improved predictive maintenance; uses augmented reality for faster fixes and diagnoses; increases safety; and empowers employees with actionable insights and operational capabilities.

“As the urgency to shift to digital operations is growing, customers are already self-migrating to digital channels, whether to reduce in-person contact or out of convenience. Employees are working remotely, straining paper-based and handoff-heavy manual processes to the limit. These shifts are only gaining steam. Those who do not embrace Industry 4.0 risk falling.” – [McKinsey. Digital Service Excellence: Scaling the next-generation operating model.](#)

The McKinsey report ‘Digital Service Excellence: Scaling the next-generation operating model’, underscores the importance of focusing on digital as a tool and as a strategic imperative for the sector. Organizations need to find their digital feet in the post-pandemic landscape or risk losing market share and relevance. This means they need to expand their existing toolkits to reimagine processes and structures so that different teams, units, silos and individuals can seamlessly collaborate and ‘[ensure every ounce of capacity created is thoughtfully reinvested or monetized systematically](#)’.

In this whitepaper, we unpack the value of DOX for organizations within heavy industry and look at how they can fully realize the potential of real-time dynamic risk management and the connected worker through artificial intelligence, predictive maintenance, connectivity and data.

## The Connected Conversation

Perhaps one of the strongest threads that ties the conversation around operational excellence together is that of the connected worker. This is a powerful and invaluable tool for the modern organization and it is one, according to [Verdantix](#), that has gained significant traction over the past few years. Connected worker solutions allow for industrial organizations to empower workers to achieve more within tighter restrictions, without compromising on security or productivity. Perhaps even more significantly, 79% of those surveyed found that connected worker solutions were a significant driver of operational excellence.

The reality is that operational environments, whether they are leveraging the capabilities of DOX or not, have become increasingly reliant on connectivity and insights to run efficiently. Investment into connected worker platforms allows for organizations to integrate information, systems and operational data more efficiently which results in safer working environments and improved overall productivity.

“The connected worker, integrated into the workplace environment by advanced networking technologies, is the human representation of digital transformation, interpreting networked data inputs collected from across an organizational grid to provide context, insight, and guidance that improves decision-making across the value chain: optimizing assembly-line operations, making inventory-adjustment decisions, fine-tuning heavy machinery.” – [Harvard Business Review. Digital](#)

The connected worker is a digital view of all facility activities that can be accessed by workers and decision makers to improve personal and process safety. Designed with artificial intelligence (AI) and machine learning (ML) technologies, the modern connected worker platform provides the organization with access to real time information that can be used to promote safe behavior and improve worker engagement. It also plays a significant role in risk mitigation strategies and in ensuring operational excellence if partnered with dynamic risk management.

So how does it work?

The connected worker is connected to data and assets, turning the smartphone into a worker safety device and the operational dashboard into a powerful operations platform. Using dynamic forms to keep workers attentive and focused along with gamified daily tasks to promote safe behaviors the basics of daily operations are handled iteratively and intelligently. To add to this, the system is designed to use audio and video communications from across the facility so that safety officers, engineers and team leaders can see what the field workers can see, and so they can proactively handle any emergencies. Connected workers can also report hazards or potential risks proactively which immediately minimizes risk and improves operational capabilities.

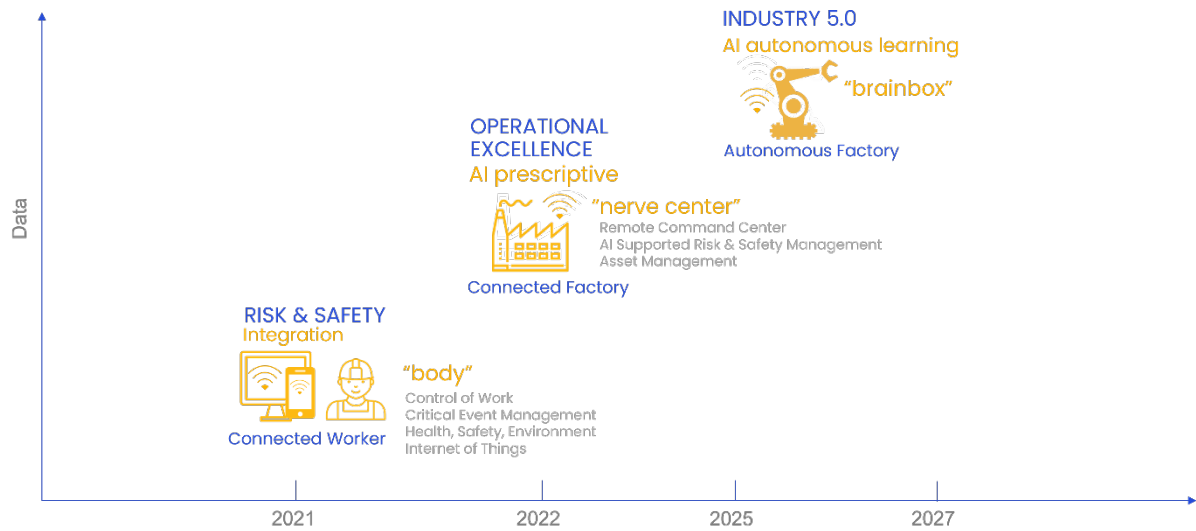
Using a connected worker platform built on AI and ML, organizations can:

- Implement 24/7 alerts for field workers to ensure ongoing safety
- Automatically stop work if a conflict arises
- Maintain worker alert levels and awareness of changing conditions through continuous updates and communications
- Actively promote safe behaviors
- Improve reporting and analytics through gamification and recognition
- Implement voice and video communications across multiple facilities to improve insights, risk management and worker engagement
- Implement ongoing training and worker development

The connected worker platform has the potential to revolutionize occupational safety while allowing for organizations to leverage data to improve operations and translate insights into value through competitive advantage, increased profits and transformed processes. It is a catalyst in driving Industry 4.0 and an essential cog in driving digital innovation throughout the sector.

““The connected worker solutions market is growing at a strong pace,” continued Fuller. “In order to take advantage of the opportunities and grow market share, solution providers must form partnerships with firms across the connected worker ecosystem, take advantage of advancements in technologies such as AI, clarify capital expenditure and operating costs alongside benefits in pricing structures, make iterative improvements to product design via continual investment and develop utility for niche use cases.” – [Hugo Fuller, Verdantix Analyst](#)

Image 1: Driving digital innovation



“Data innovation is the initial fuel for digital transformation. It refers to the collection and analysis of data for the purpose of deriving insights which otherwise would have gone unnoticed. Data innovation then uses analytical processes and technology to drive insight, such as Artificial Intelligence and IoT. What enables this journey are cloud, connectivity and security.” – [Accenture. Data Transformation.](#)

## Data-driven decision making

Putting the connected worker at the heart of the organization’s digital strategy has become a differentiator, and a driver of innovation and growth. For organizations looking to establish agile and adaptable workforces at a time when markets are volatile and circumstances uncertain, this technology both empowers and enables people to do more and go further. This in itself refines operational capabilities and embeds excellence within the business and its operations, but it equally reshapes the risk conversation.

There are several factors that combine to drive data-driven decision making within heavy industry:

- Dynamic risk management
- Real-time alerts and insights
- Data-driven insights and analytics capabilities

- A visualized command center with coherent access to all information and that delivers information in real time
- The connected worker and intelligent engagements
- Autonomous system management with proactive and predictive capabilities
- AI, IoT and ML capabilities

Dynamic risk management should be an integral part to reach operational excellence – strategically and functionally. It should also be informed by data-driven decision making that tugs on the insights and data provided throughout the digital, connected, ecosystem. This runs from the connected worker through IoT and Industrial IoT (IIoT) sensors and systems to analytics with a real-time visual view in a centralized command center.

By pulling together every one of these touchpoints, organizations are creating an autonomous and intelligent dashboard – a brain that ensures the right people have the right information at the right time. It's an AI-assisted platform that connects humans, machines and systems to deliver operational excellence consistently, and to assist in driving the optimization of factory and field performance with relevant information and insights in real-time.

This radical reimagining of operational reality is a far more effective way of visualizing and dynamically managing work activities and risk. It connects people and brings disparate data from systems, sensors and human-derived activities together to deliver meaningful, actionable insights across the organization.

## Dynamic Risk: The Value of Time

“The dynamic management of risk is about decision making. It's the continuous process of identifying hazards, assessing risk, taking action to eliminate or reduce risk, monitoring and reviewing, in the rapidly changing circumstances of an operational incident. It's also a powerful tool in ensuring operational safety, process excellence, worker engagement, productivity and so much more.” – **Dror Barak, CEO of GOARC.**

Dynamic risk management is a whole new world for heavy industries. It grabs hold of the potential of DOX and wraps it around the intelligence of AI and insights to create a platform that uses AI-driven predictive and prescriptive analytics with real-time data collection to achieve dynamic safety routines.

## The key benefits of dynamic risk management

Dynamic risk management ensures that decisions are data-driven which means that they are targeted and relevant, saving on costs and time. Alerts are in real-time which allows for rapid response times and improved worker safety, plus it adds the ability to identify and monitor predictive and proactive metrics with actionable insights for improved decision-making and continuous process improvement. Add in the fact that there are actionable insights derived from real-time data analytics, historical data and company-wide curated metrics, and it continues to add value to the organization throughout the value chain.

In addition, dynamic risk management should provide:

1. Benchmarking across business units, facilities and regions.
2. Detailed reporting that can reveal crucial information that will allow for decision makers to identify pain points and drive improvements in company asset and safety management – strategically, and in real time.
3. Personalized and visualized business reports and insights customized for every role in the company.
4. A risk model that includes data from the worker, location, time of day, weather, tools and materials. It proactively prevents events that threaten worker lives or create production failures and can deliver a personalized safety routine that guides the performance of people, tasks and assets.
5. A permit to work (PTW) strategy document and system that's highly agile and adaptable to ensure worker safety and measurable risk reductions in hazardous or non-standard working conditions.
6. Dynamic risk management connects siloed data to detect risks to asset reliability and availability.
7. Perform Risk Based Inspections based on threat likelihood and potential consequence have measurable value for decision makers and the organization.
8. Deploying dynamic operator rounds based on asset health and safety performance data including anomalies and corrective actions can fundamentally change the risk dialogue.

“Using data and insights provided by a real-time, integrated platform, you know that the data is constantly refreshed, and fresh, so you can manage your environments and PTW with greater efficiency and clarity. An optimized PTW will also include photographs and videos of the field along with the relevant time and location stamps as well as diagrams, charts, and more. You can then use this information to not just resolve issues at speed, but to proactively refine PTW management across multiple environments and scenarios.” – **Dror Barak, CEO of GOARC.**



## Achieving Excellence

The dynamic management of risk is ultimately about decision making. This means that all those involved in operational incidents need to be fully trained and have comprehensive line of site into all the elements involved in the decision-making process. The following steps break down best practice in dynamic risk management and assessment to fully realize its value in mitigating risk, both proactively and reactively.

### The Excellence Checklist

These are just some of the most important steps:

- ✓ Decision makers must be able to recognize and appreciate the risks that are present at the incident to carry out an effective dynamic risk assessment.
- ✓ During the dynamic phase, the decision-making process involves analyzing and reviewing the risks and benefits presented by the incident and selecting an appropriate response while making a judgement on whether the risks are proportional to the benefits.
- ✓ To provide an acceptable level of protection at operational incidents, decision makers need to ensure that they can operate successfully across the three levels of strategic, systematic and dynamic:
  - Strategic work safety management is built on foundational principles, ISO standards and policies.
  - Systematic work safety management is handled by specific departments and aligned with internal and external policies.
  - Dynamic risk management is handled by all personnel on the operational level.
- ✓ Rapid identification of the hazards and the risks followed by a professional judgement call that leverages available resources to ensure acceptable levels of safety for all concerned.
- ✓ Clear risk assessment outcome recording to ensure that it can be later analyzed and assessed to continuously improve risk assessments and capabilities.
- ✓ Active communication and collaboration enhanced by rigorous data collation and analysis to provide decision makers with increasingly rich and detailed information that will inform evaluations during an incident.
- ✓ Comprehensive incident debrief and information sharing that's then used to refine and/or redefine policy to ensure that training, procedures, incident management and operations are constantly improved to the highest possible standards.
- ✓ Ensure seamless integration between the command center, connected worker, control of work (PTW/ Shift Management), critical event management, asset management, and health and safety with a cohesive digital ecosystem.

## Safety 4.0 by GOARC

The GOARC Safety 4.0 platform is an innovative industrial safety solution that blends digital, innovation and intelligence into a coherent solution that delivers measurable results. Offering real-time, multi-level predictive and preventative data and insights, this AI-driven solution leverages predictive analytics for behavior-based safety within dynamic safety routines.

Using data, technology and behavioral science, the SaaS-based Safety 4.0 platform allows for organizations to create dynamic safety routines that incorporates real-time data collection and eliminates information gaps, data gaps and team silos by moving from point solutions into one real-time, multi-level fully connected solution.

Built on the five core pillars of the connected worker, connected process, command center, intelligence center, and AI and ML, the Safety 4.0 solution delivers a constant flow of information throughout a cohesive digital ecosystem that thrives on data. Every touchpoint, user and system is part of the flow – connected and integrated to provide robust data and insights that can constantly evolve the business and inform strategic decision making.

Find out more about [Safety 4.0 from GOARC](#), and discover how to reach operational excellence through real-time dynamic risk management and data-driven intelligence.