

# The evolving technology landscape for supply chain security and efficiency



## Summary

Changes in consumption, the rise of e-commerce and the expectations of consumers who are ever more concerned about sustainability, service options, personalization and traceability are just some of the challenges faced by distribution and logistics.

All of these challenges need to be dealt with by a fast-flowing, efficient supply chain. With speed being of the essence, to serve both the retailers and the consumer, the industry has had to transform the way it works by linking goods with people like never before.

Many have quickly expanded to seven days a week operation, evolved to embrace e-commerce, hired more people and invested in technology and digital assets.

These measures have been effective, as it's now a thriving industry, with many distribution and logistics

companies reporting further expansion plans. In the US alone, the freight and logistics market value has been estimated in 2024 at \$1.33 trillion<sup>1</sup>.

These impressive numbers also point to an unfortunate reality: logistics facilities are prime targets for theft and shrinkage.

It's estimated that employees steal over \$50 billion in inventory annually from U.S. businesses<sup>2</sup>. Workplace violence is another risk that must be addressed, as it threatens not only the safety of staff and visitors but also the brand itself.

This need for robust security must be balanced against the need for facilities to offer an open and welcoming environment. Both workers and visitors should feel they are being congenially received, not that they are approaching a fortress.

<sup>1</sup> United States Freight and Logistics Market Size. Published by Mordor Intelligence:  
<https://www.mordorintelligence.com/industry-reports/united-states-freight-logistics-market/market-size>

<sup>2</sup> 49 Shocking Employee Theft Statistics (2024,) published 05.12.23:  
<https://explodingtopics.com/blog/employee-theft-stats>

In this white paper, we explore how distribution and logistics meet demand, whilst ensuring the safety and security of their operations.

It poses the question: “How can logistics and distribution centers continue to create efficient and open yet secure supply chain environments to maintain fast and effective delivery?”

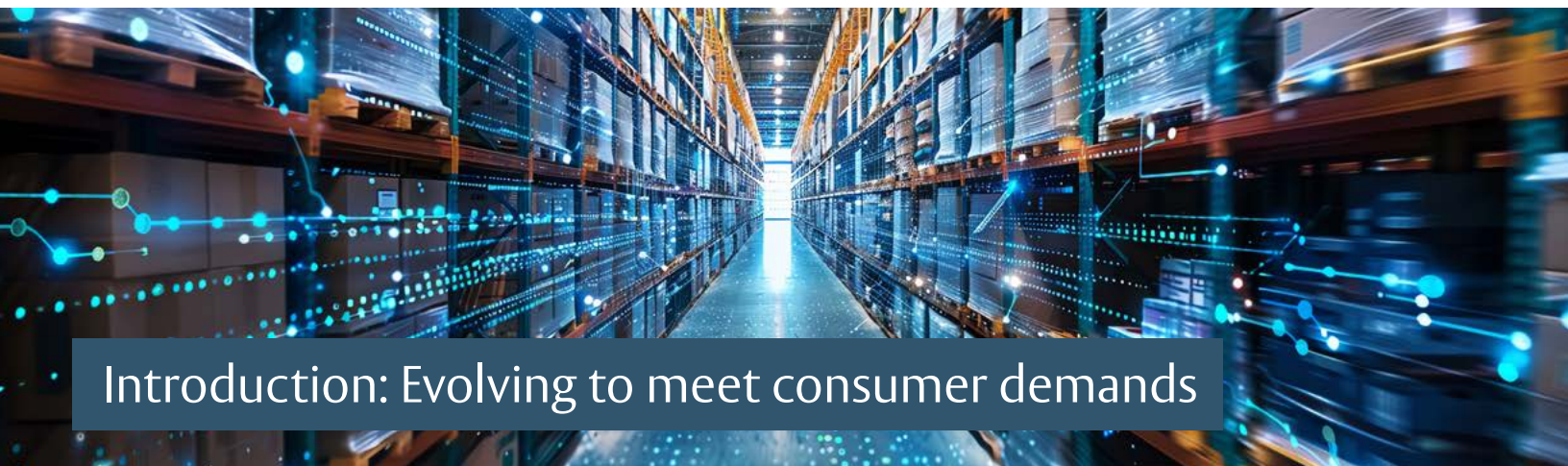
As a sector that has seen unprecedented growth, in ensuring the effective delivery of goods on time, in full, we believe demand is likely to continue and logistics is well placed to continue its prominence as a sector vital to economic success.

By producing this discussion paper, Traka wishes to stimulate debate and encourage contributions from many voices. We look forward to engaging with you and your colleagues in this dialogue and would be pleased to share additional points of view, information and insights. Feel free to reach out to your usual Traka contacts to start the conversation.



### About the author

Lee Payne is a dedicated Business Development Manager for Traka UK, specialising in supporting logistics, transport and distribution companies to provide efficiency improvements to operations and offer significant return on investments across each business. His understanding of process controls, ensures supported companies have authority over their tooling and maintenance processes.



## Introduction: Evolving to meet consumer demands

Consumer habits are constantly evolving, presenting both challenges and exciting opportunities for retailers. To meet these demands, retailers are increasingly adopting an omnichannel approach by selling products in physical stores, online, and via social and mobile platforms. By 2025, mobile commerce is expected to surpass the \$100 billion mark.

E-commerce sales are steadily rising, and with this growth, consumers' expectations are becoming more demanding. Shoppers now anticipate flawless delivery services with shorter delivery times, high-quality packaging that matches in-store purchases, and environmentally-friendly practices.

Consumers also need assurance that e-commerce platforms are fully optimized, highly visible, and in control of the supply chain. This optimization includes

streamlining processes to swiftly adapt to changing demands.

This scenario necessitates a complex network of well-managed procedures, which can enhance visibility, customer satisfaction, and competitive performance.

Agility is crucial for success. As L'Oreal describes it, agility is the “first pillar of our strategy,” meaning the ability to respond promptly to market changes. Agility is an ongoing process requiring distributors to continuously evaluate their supply chain, learn from past experiences, and embrace new technologies and methods.

Innovation and integration are also vital. Advancements in technology will play a key role in the future of logistics, ensuring businesses can evolve and meet consumer demands in innovative and efficient ways.



Advanced analytics, artificial intelligence, and machine learning can provide real-time insights into market trends, consumer demands, and potential supply chain disruptions. With such intelligence, distributors can adjust inventory levels, reroute logistics, or change suppliers as needed. This leads us to the critical role of key and asset management in securing the supply chain. How can effective management practices further enhance the resilience and efficiency of supply chain operations?



## Intelligent security technologies in the supply chain

Today, the supply chain industry is experiencing a surge in the adoption of intelligent security technologies. These technologies, powered by artificial intelligence (AI) and machine learning, have revolutionized the operation of warehouses and distribution centers.

AI-driven cameras can now detect and differentiate between people and vehicles, using re-identification technology to track movements throughout a facility. They can read and register critical information on trucks and trailers at the gate almost instantly.

The high confidence level of AI-empowered video, combined with remote connectivity to video platforms via the cloud, allows warehouses to receive real-time responses from their security platforms. While traditional protocols such as dispatching police and contacting call lists remain vital, the ability to connect, react, and potentially deter incidents from occurring is transforming how supply chain companies secure their sites.

Smart security solutions enable businesses to react in real time to security alerts and can verify if an incident requires police dispatch or proactive monitoring. AI video cameras can determine if people or vehicles are in unauthorized areas and send audible messages to deter trespassers.

## Maintaining operational efficiency

To ensure effective operations, logistics strategies must involve maintaining up-to-date communication throughout the supply chain. This includes establishing an adequate number of distribution intervals, optimizing distribution rates, and regularly evaluating processes.

The logistics sector relies heavily on rotational shift patterns, with many companies operating around the clock, seven days a week, to meet retail and consumer demands. Coordinating these shifts is crucial to ensure adequate staffing levels, especially during busy periods. It involves ensuring assets are easily accessible and ready for transfer between shifts while maintaining full functionality.

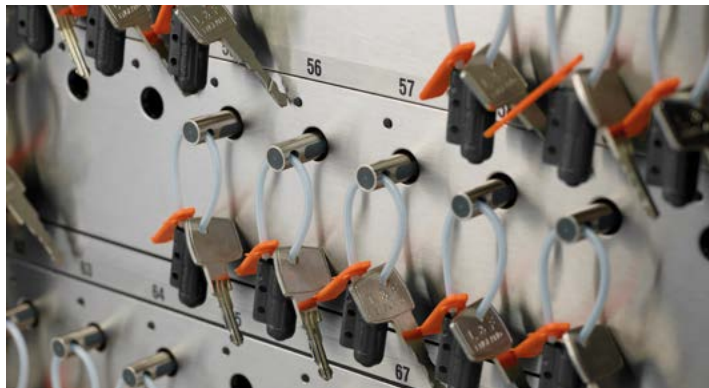
This 24/7 operational model demands high levels of accountability, organization and communication. Any lapse in coordination can lead to delays, reduced productivity and increased costs. Efficient shift management requires not only the right number of personnel but also ensuring they have access to the necessary tools and information to perform their duties effectively. Advanced scheduling software and automated systems can assist in planning and tracking shifts, preventing overlaps or gaps in coverage.

Real-time data and analytics provide insights into peak times and resource utilization, minimizing downtime and enhancing overall operational efficiency. Digital key management systems, for example, ensure that only authorized personnel have access to specific vehicles or equipment, reducing the risk of unauthorized usage and potential security breaches.



## Key and asset management innovations

The integration of advanced key and asset management systems is a crucial solution for securing the supply chain. These innovations help manage and track assets effectively, ensuring that only authorized individuals have access to critical equipment and areas. This approach enhances security and operational efficiency, providing a robust framework for the modern supply chain.



### Case Study: Optimizing workflow in a beauty company with integrated key and asset management solutions

A renowned global leader in ethical and sustainable beauty products has installed customized Traka RFID locker solutions at its main distribution center to ensure intelligent asset management, enhance security and streamline operations.

At this main center, three large-scale Traka intelligent locker systems manage different devices. The first system uses Traka's multi-bay cradle locker solution to manage 30 Vo Collect voice-picking devices and Bluetooth headsets, keeping them charged and ready to operate.

The second system houses 40 Falcon handheld scanners, managed by Traka's modular Asset Master Lockers, which includes charging and battery points.



The final system provides secure storage for a set of equipment specifically designed for forklift truck drivers, with each locker compartment containing a Falcon scanner, radio, and printer.



Each intelligent locker solution includes RFID asset detection and TrakaWEB software, giving managers instant audit control to track when devices are removed and returned to lockers.

The Shift Manager responsible for the project says, “To keep up with high demands, our distribution center operates 24/7. It is constantly evolving, driving new standards in design and use of technology to ensure our products reach our stores to meet our loyal customer demands. To operate at maximum capacity, we need to make it as simple and quick as possible for authorized colleagues to access the devices they need and ensure they are operational and in good working order.”

The three locker solutions are installed in two separate locations around the distribution center to ensure staff can easily access equipment in their work area.

“With the introduction of Traka, we have eliminated manual control and gained a complete audit on all devices that we can access from anywhere. We have already noted increased accountability, traceability, and fault logging, all of which reduce lost time and enhance operational efficiency.”

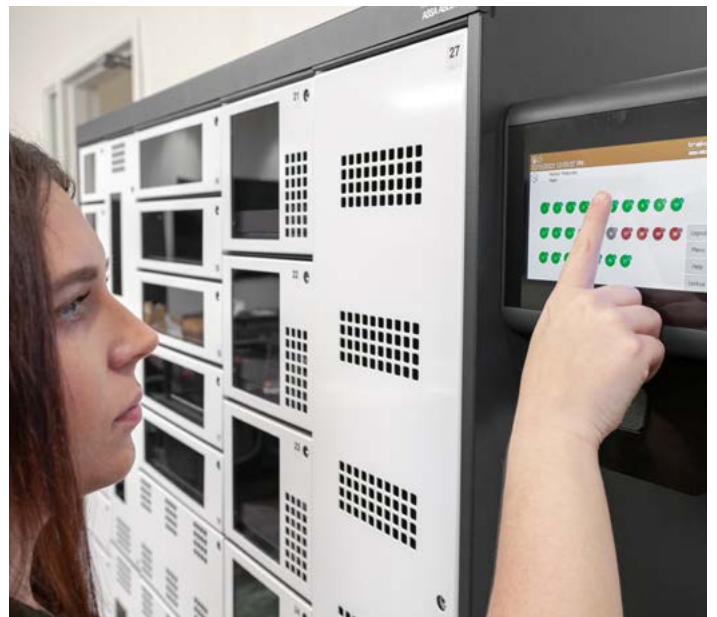
Eliminating the need to travel to a central location and queue for equipment has improved productivity at the start and end of shifts.

Traka has also ensured all systems operate using existing Paxton Net2 access control cards to minimize facility disruption during or after installation. Access to different assets and equipment is granted only to authorized personnel for their specific job roles, with staff able to take one device or kit at a time.

This example shows how simple process enhancements can make a significant difference. From the initial brief through to implementation, we worked closely with the team to identify the exact requirements for each site and the accessibility needs for staff.

Traka sought to understand the need for curfew notifications, fault logging and authorized access control. They planned with the team to separate the systems into specific work areas and use the Traka orange branding to help the locker systems stand out, all to ensure vital time could be saved for staff and management.

The result is a smoother, more efficient operation throughout the supply chain, which helps the global brand continue its mission of delivering its best-loved ethical beauty products.



# Future of Physical Security in the Supply Chain Industry

Looking ahead, the future of physical security in the supply chain industry is set to be profoundly influenced by advancements in technology such as AI, machine learning and IoT. These technologies will continue to shape the industry's security landscape.



## Integration of physical security systems

A key area of focus will be integrating physical security systems with other business operations. This integration will provide businesses with a holistic view of their operations, improving operational efficiencies and risk management.

## Importance of intelligent key and asset management

Intelligent key and asset management will become increasingly crucial. These systems will enable businesses to control and manage access to critical assets and facilities, ensuring only authorized personnel have access.

This approach will enhance security and help prevent loss and theft. By leveraging advanced integrated technologies, companies can monitor asset movement in real-time, optimize inventory management and reduce the risk of disruptions in the supply chain.

Enhanced key management will also support compliance with regulatory requirements, which promotes a secure and efficient operational environment. This ensures that distribution and logistics operations can continue seamlessly, meeting consumer demands on time and in full.





## Conclusion

*The best supply chains aren't just fast and cost-effective. They're also agile and adaptable, ensuring that all their companies' interests are aligned.*

The distribution and logistics industry is facing challenges driven by evolving consumer demands, the rise of e-commerce and the need for sustainability, personalization and traceability. To meet these demands, the industry has had to evolve by embracing technological advancements and operational changes.



### Evolution of logistics operations

Logistics companies have expanded their operations to seven days a week, invested in digital assets, and hired more personnel to keep up with the fast-paced environment. This transformation has not only enabled the industry to thrive but also highlighted its economic importance.

### Addressing security challenges

With growth comes increased security challenges. Theft and shrinkage remain significant issues, with billions of dollars in inventory lost annually. Workplace violence also poses risks, emphasizing the need for robust yet welcoming security measures.



The integration of AI, machine learning, and IoT in security systems has become crucial for providing a comprehensive view of operations, improving efficiency and managing risks. Intelligent key and asset management systems are pivotal in enhancing security by ensuring that only authorized personnel have access to critical assets. These systems help prevent loss and theft while ensuring regulatory compliance and optimizing inventory management.

### Maintaining competitive edge through agility and innovation

Agility and continuous innovation are key to maintaining a competitive edge. Advanced analytics and AI provide real-time insights, enabling distributors to adapt quickly to market trends and disruptions.

The future of the supply chain industry lies in the seamless integration of advanced technologies and innovative practices. By continuously evolving and adapting, logistics companies can meet consumer demands while ensuring secure and efficient operations.

The industry's ability to balance speed, cost-effectiveness, agility, and security will determine its success in a dynamic market environment. Engaging in ongoing dialogue and sharing insights will further drive progress, ensuring the distribution and logistics sector remains a critical component of economic growth and success.

## How Traka can help

Traka is the global leader in intelligent management solutions for keys and equipment, proving essential in supporting leading distribution and logistics divisions to meet growing customer demands.

Using the latest asset management technology, Traka efficiently bridges the gap in many safety and security strategies by providing automated and controlled access to keys and shared equipment, including PDAs, laptops, tablets, vehicles, specialized devices and more.

Traka's software-controlled key cabinets and lockers record every activity, generating more responsible users and complete audit control visibility for all protected items. These solutions can be integrated into existing databases or third-party platforms, making administration easy and enabling real-time workflows that improve operational processes—an essential component for the success of the logistics and distribution industry during the pandemic.

Our solutions are tailored to customer needs and requirements, providing the most value and impact on their business. Our commitment is to ensure 'great service delivers' through a truthful, responsive, approachable, kind and accurate approach to our customers.

As an ASSA ABLOY company, Traka is dedicated to working together with customers across all sectors. By listening closely to customers' needs, Traka can design and propose customized key and asset management solutions that respond precisely to their requirements.

This results in numerous benefits, including enhanced efficiency, cost savings and reduced risks. Enhancing key and asset management solutions adds considerable value for customers and end users alike.

For more information on Traka's range of intelligent asset management solutions, dedicated to distribution and logistics, contact us at [info@trakausa.com](mailto:info@trakausa.com) or visit our website [www.traka.com](http://www.traka.com).



Intelligent management solutions  
for keys and equipment

[traka.com](http://traka.com)

**traka**  
ASSA ABLOY

The ASSA ABLOY Group is the global leader in access solutions. Every day we help people feel safe, secure and experience a more open world.