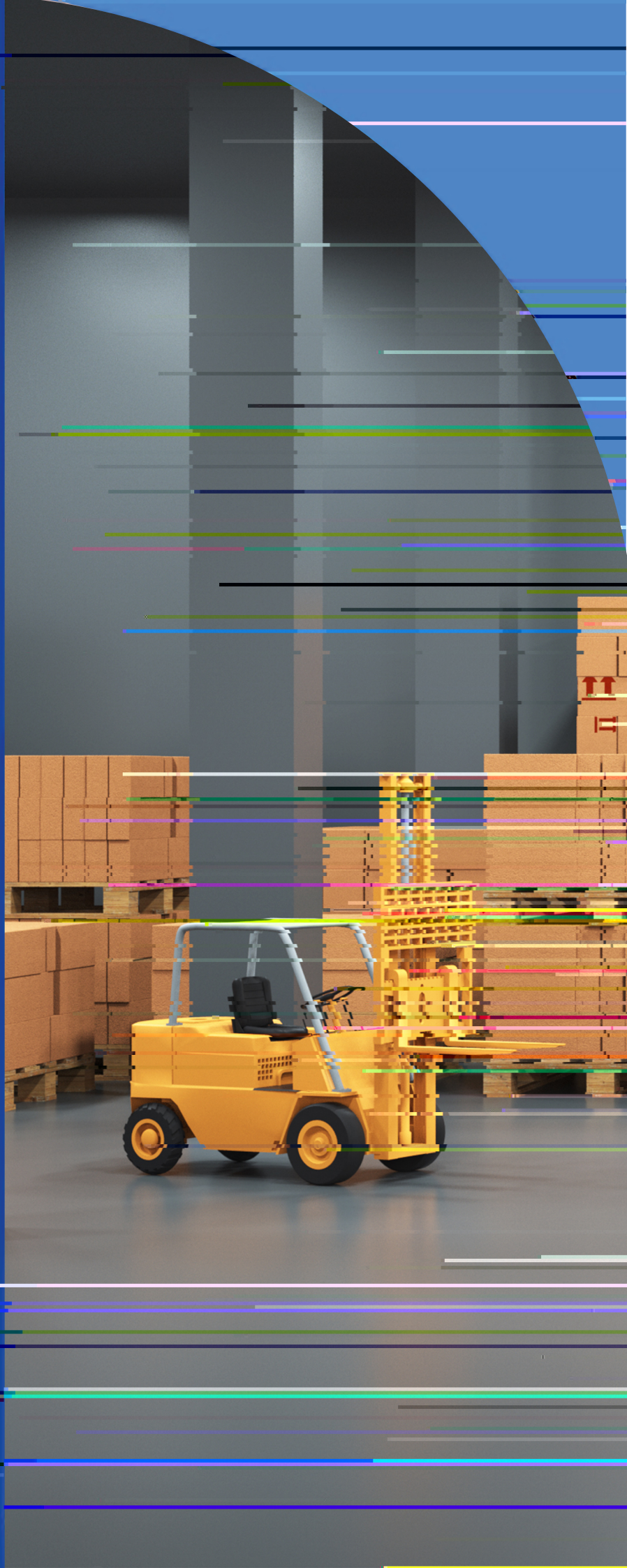


# 5G Smart Logistic — Unmanned Warehouse

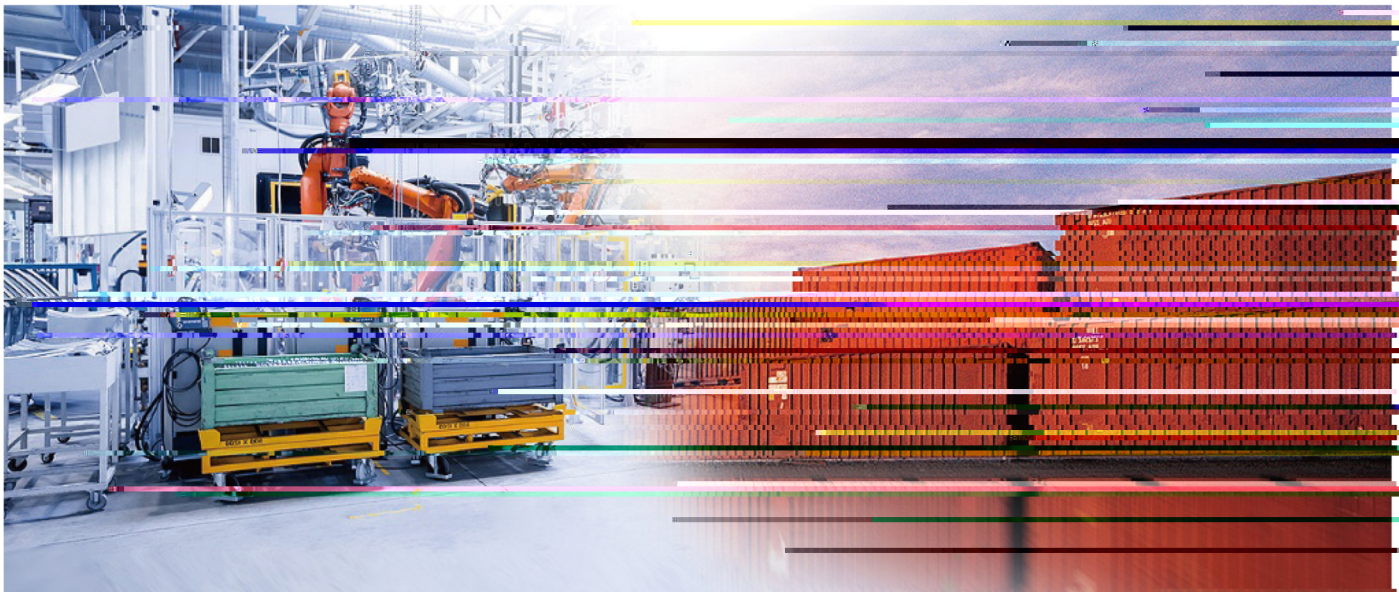
A Fibocom IoT Connectivity  
Case Study





# Smart Logistics

## Customer



One of China's largest online retailer has deployed its unrivalled nationwide logistics network. With sophisticated delivery technologies, customers can enjoy same- and next-day delivery. The 5G smart logistics unmanned warehouse project relying on 5G, integrates various intelligent equipment such as AGVs, AMRs (Automated Mobile Robot), forklifts, robotic arms, and unmanned warehouse vision systems in the warehouse. It has solved the deployment and maintenance difficulty in the existing factory warehouse.

## Industry Challenges

The e-commerce industry and the new retail sector have increasingly high requirements for the timeliness of logistics and distribution. Smart logistics, unmanned warehousing and automated sorting systems are playing an increasingly important practical applications. Emerging technologies such as 5G, IoT and artificial intelligence will play a "key role" in the digital transformation of smart logistics.

Traditional warehousing lacks connectedness, resource sharing and scientific warehousing control. In the warehousing, sorting, dispatching and other operations, the coordination is poor, manual intervention is frequent, and the overall innovation ability is weak.

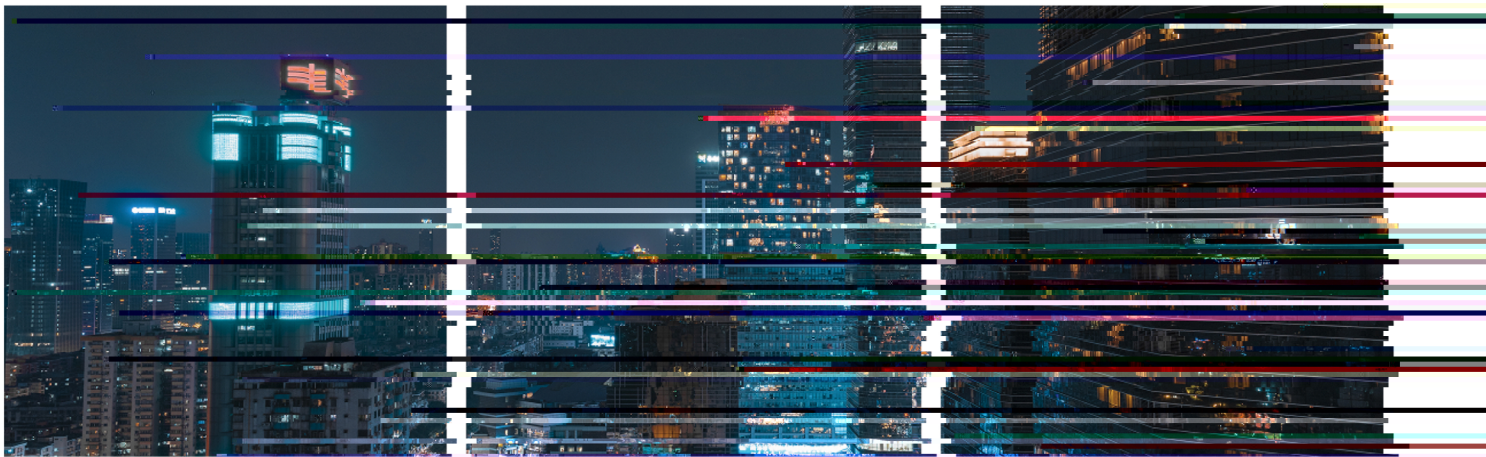
With a low degree of digitalization, it is difficult for traditional logistics solutions to maximize the advantages of big data, artificial intelligence and other technologies. Additionally, the integration and utilization of data and information and artificial intelligence is relatively rare in traditional means of logistics.

Traditional storage AGVs use WIFI and numerous wireless communication protocols, which is inadequate, relatively closed and difficult to connect the equipment with the cloud.

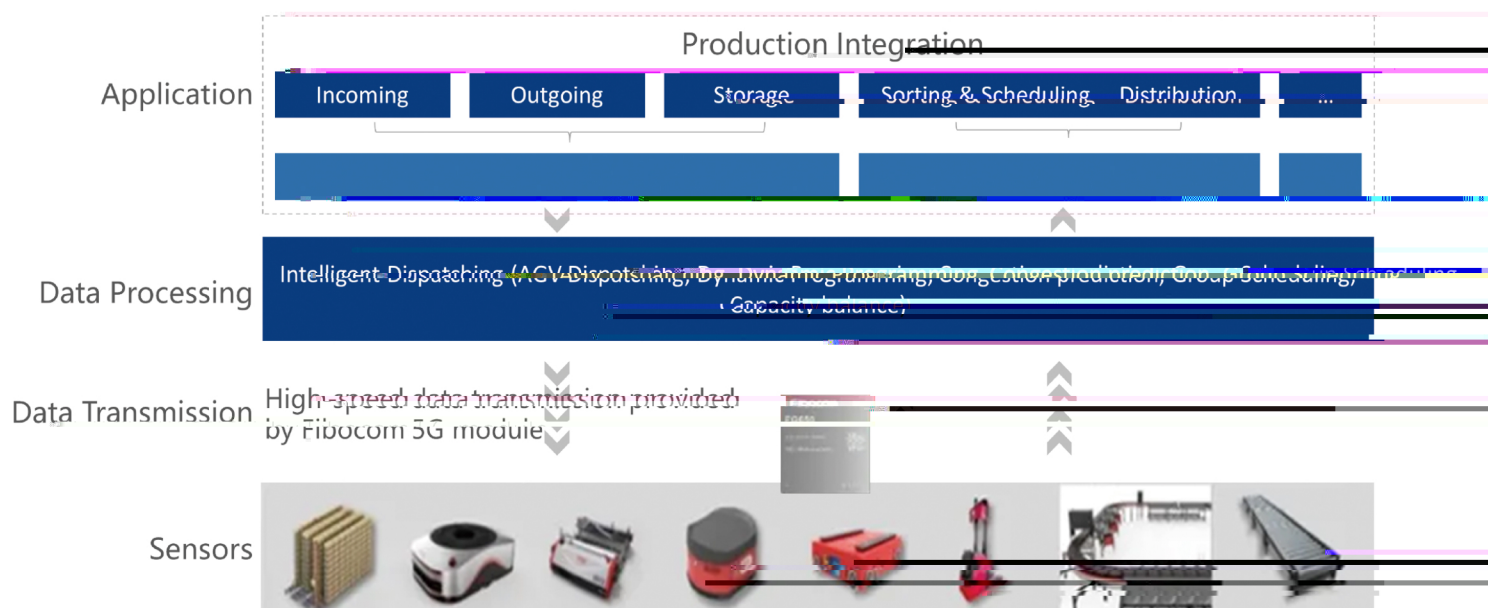


## Other disadvantages include:

1. Network disturbance: the security and stability of Wi-Fi and other wireless connection is not ideal;
2. Problems related to concurrency and collaboration of several computers; wireless networks are limited by bandwidth and multi-terminal access, and cannot guarantee low latency and real-time connection...;
3. The complexity, cost and performance of terminals;
4. Management and control;
5. Deployment and construction;
6. Shifting...



## Solution





The Fibocom FG650 module supports 5G SA and NSA, and is backward compatible to 2G/3G/4G. 5G communication modes. It also supports both SA (independent networking) and NSA (non-independent networking), fully meeting different communication and networking requirements of 5G. Using the technical advantages of 5G's high bandwidth and wide connectivity, various devices in the unmanned warehouse of smart logistics can be connected and intelligent analysis is conducted through the cloud to assist decision-making. The Fibocom 5G FG650 module can be adapted and integrated into different terminals such as AGV, AMR, forklift, robotic arm, etc., to enable 5G communication capability in industrial terminals.

Integrated with Fibocom's 5G modules, smart logistics terminals can use 5G private network, NFV and network slicing to make unmanned warehouses intelligent. Through robot networking and cloud intelligence, smart logistics system supports large-scale collaborative operations of robots, reduces the cost of single robot equipment, and enhances the market competitiveness of unmanned warehouses.

## Benefits



Unmanned sorting process can improve the product picking efficiency, and reduce the time of product delivery. Through the digitalization of warehouse system, 5G smart logistics brings unmanned factory management and operation into reality, realizing a high degree of automation and intelligence.

The low latency, high speed and ability to support a broad spectrum of simultaneous connections provided by 5G networks creates an unprecedented level of real-time connectivity, significantly improving the efficiency of customer service in the business.

Under the 5G network, combining AI, IoT and other intelligent logistics technologies and product integration applications, delivery and other warehouse operations are fully digitized and intelligent.