



RTLS in Retail

Streamline operations, improve customer experience and increase sales **with indoor positioning.**

Go from sales per square meter to conversion.



RTLS = Real Time Locationing System

RTLS in Retail

From Sales per Square Meter to Conversion

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Introduction

The purpose of this guide is to share our experiences on how accurate and reliable indoor positioning can be used in the trade sector. We go through how our technology helps to **reduce waste, optimize daily work and improve the customer experience**. In addition, we present how location data can be used to develop business.

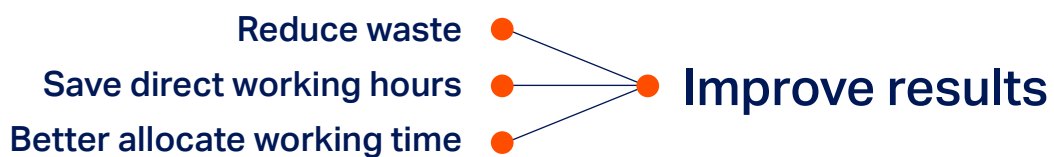
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Optimizing Daily Store Operations with Location-Based Solutions

Waste Management: Store Manager Application

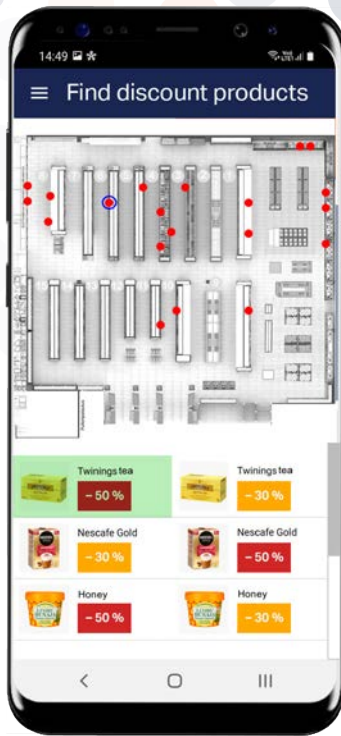
Daily routines in the store involve a lot of time-consuming checking of product expiry dates. Developed in collaboration with store employees, Iiwari's Store Manager application significantly enhances this process. It allows easy management of product expiry dates and timely responses to expiring products, such as offering discounts.

For individual products, marking down expiring items is straightforward when they can be directly located using the application, eliminating the need to search for them among other products.



The Store Manager application is functional, useful, and easy to use. It significantly shortens the time spent on checking expiry dates. It truly helps us in our daily routines and works in practice!

Anna Heikkinen
Store Manager, K-Supermarket Vuokatti



*Store size: 1500 m².

Case K-Supermarket: Significant Improvement in Business Results

Our customer's* experience:

With the Store Manager application, **waste reduced by 34%** in a year. Waste decreased from 112,000 € annually to 74,000 €, meaning a **38,000 € improvement in results**.

Examples of changes in product categories:

- Meat and meat products: -36%
- Cheeses: -14%
- Milk and yogurts: -30%

Store Manager saved over 15 hours of working time per week, which translates to about **20,000 € annual savings** for this store.

Additionally, approximately 10 hours of working time per week are better allocated.

Benefits of Iiwari Store Manager App



- **Efficient Inventory Management:** Manage product locations, expiration dates, and discounts in real time. Reduce waste and ensure shelves are stocked and products are ready for sale.
- **Optimize Task Allocation:** Link staff locations to tasks, ensuring store operations such as stocking, date checks, inventory checks, and promotions are performed at the right time and efficiently.
- **Save Labor Hours:** The app allows task management and optimization even when the store manager is not on-site, improving employee productivity and saving time.
- **Real-Time Insights:** Track inventory, tasks, task performance, and exceptions to enhance store operations, planning, forecasting, and ordering.

More Efficient Operations with Optimized Working Time and Resources

Have you ever figured out how many kilometers your employees walk during a workday?

Daily tasks such as shelving, stock checks, picking, price updates, campaign implementation, and occasional cashier duties can easily add **up to 10 kilometers of walking in a single day**.

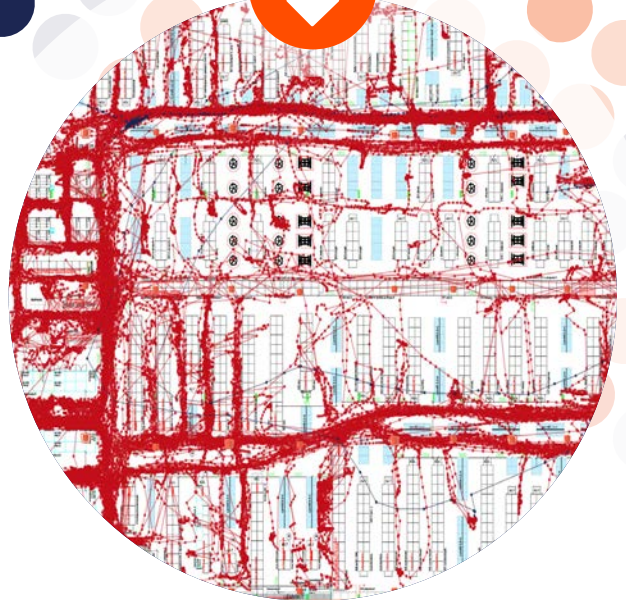


Transitioning between different tasks **reduces work efficiency** and **can become a burden for employees**, especially in large stores.

With Iiwari's indoor positioning, the precise location of products and tools can be used to dynamically optimize tasks based on their current location.

Using precise and reliable location data, workflows are optimized by:

- Ensuring employees can easily find products in the store.
- Dynamically and automatically organizing the task list in an optimal way, allowing the shortest route for task completion.
- Allowing different tasks such as expiry checks, stock checks, or price tag replacements to be included in the same route without compromising efficiency.





Real-Time Location Data and Increased Utilization of Equipment

With positioning, the **location of expensive equipment is always known**, and their loss can be prevented. When items and equipment are never lost, **work efficiency increases**, and **equipment utilization rises**. Time is not wasted on searching, and new equipment purchases are less frequent.

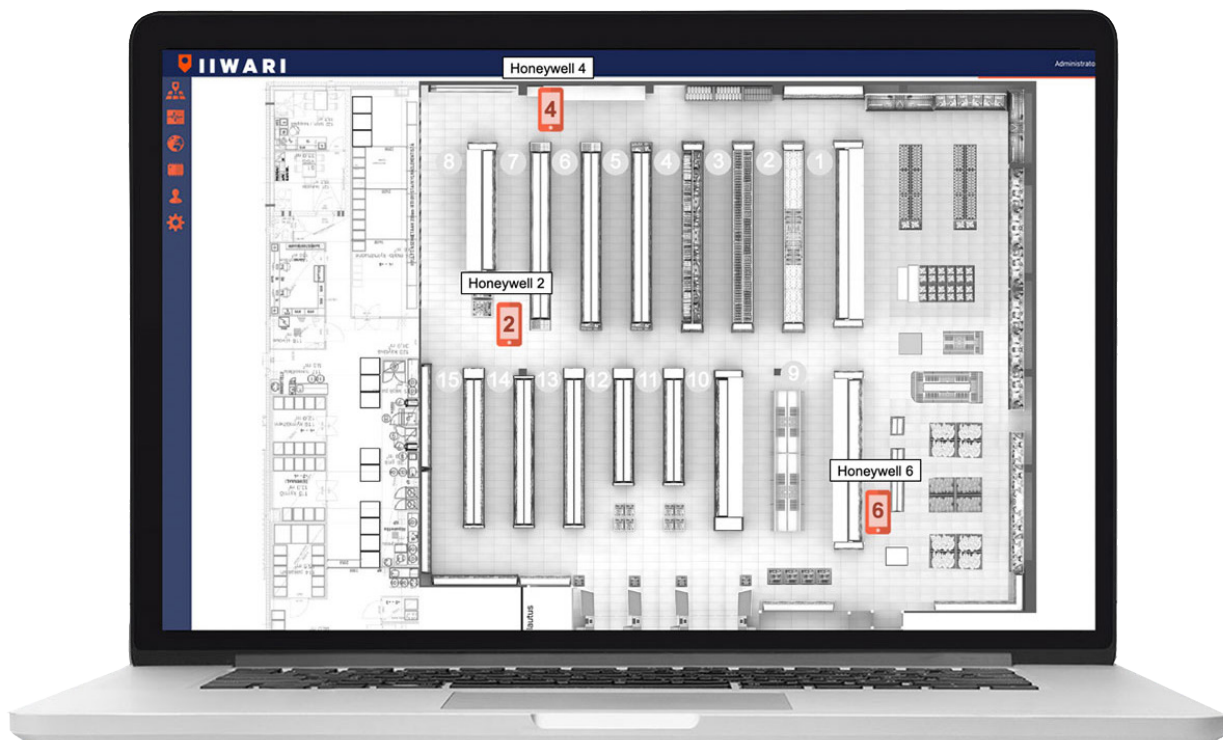
The location of essential handheld devices for store work can be seen on a phone or the break room screen, and an alert system can be created for situations where a handheld device is approaching the dumpster. It is not uncommon for an important device to end up in the dumpster accidentally, e.g., with packaging waste.

▶ Seeing the real-time location of colleagues also greatly eases everyday work in the store.

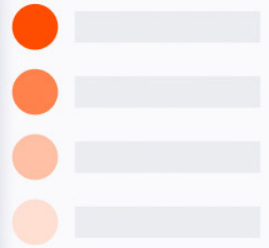
We have noticed that soon after adopting Iiwari's technology, our daily operations in the store have changed. The technology saves our working time and is extremely useful! We can easily find our colleagues and important devices."

Anna Heikkinen

Store Manager, K-Supermarket Vuokatti



3 Data-Driven Store Management



Sales data does not provide a complete picture of customer behavior. **Indoor positioning in the store can be compared to web analytics.** It allows you to see exactly how customers move in your store and provides an automatic flow of information about everything happening in the store.

Iiwari Shopper Insights – Customer Flow Analytics

- **Accurate Customer Movement Tracking:** Track customer movements within the store with sub-meter precision. This helps you understand which products attract attention and where customers spend the most time.
- **Optimize Product Placement:** See how customers respond to different areas and promotions, and optimize the store layout to increase sales.
- **Real-Time Insights:** Use real-time data and react quickly to changes in customer behavior, such as increased time spent in specific promotional areas.
- **Prove ROI:** Show the effectiveness of campaigns and brand partnerships with measurable results. Iiwari Shopper Insights provides precise data that helps justify investments and demonstrates the effectiveness of marketing efforts.



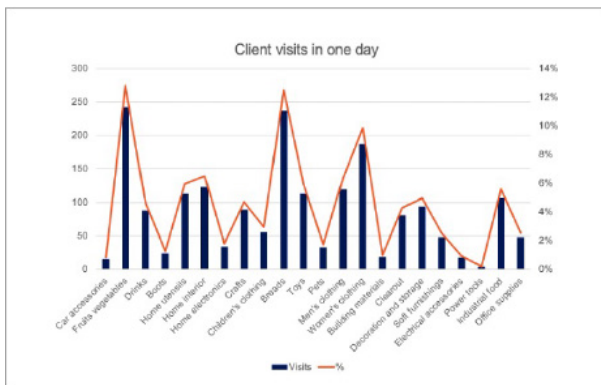
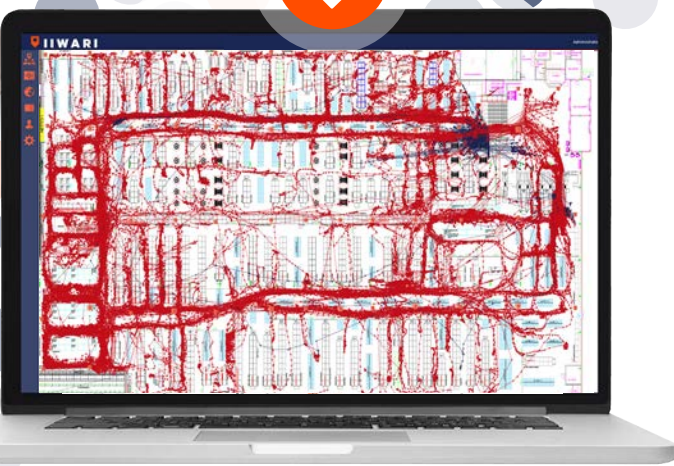


Measuring Store Changes: From Sales per Square Meter to Conversion

By tracking customer flows, **you can see which aisles have the most/least traffic**. This information helps improve product placement and optimize the use of store space. Positioning data can be used to assess the impact of store changes and **ensure that customer circulation, average purchase, and sales per square meter increase**.

Customer route data can be used to **calculate conversions for specific product categories and promotional products**. For example, the conversion rate for a product category can be high even if the sales per square meter are not significant. The products in the category are thus purchased frequently relative to the number of visitors.

Indoor positioning helps **measure the productivity of store departments** by comparing customer visits, work done there, and sales using automatically collected data. **This provides an accurate and reliable picture of department performance**.



Conversion and Advertising Effectiveness

The store space as a medium is an attractive choice for advertisers because it provides a lot of data on customers and the success of upselling. **The unique feature of store media is bringing communication to the moment of the customer's purchasing decision**.

liwari's solution **enhances the effectiveness of ads and campaigns with location data**. This allows advertisers interested in a specific category of customers **guaranteed visibility**. For example, smart cart screens enable location-specific promotional advertising, **increasing customers' average shopping basket value by up to 20%**.



Advertising is most effective at the moment of purchase decision.

Utilizing Data in Operational Activities:

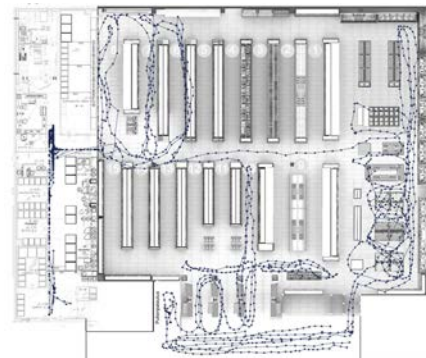
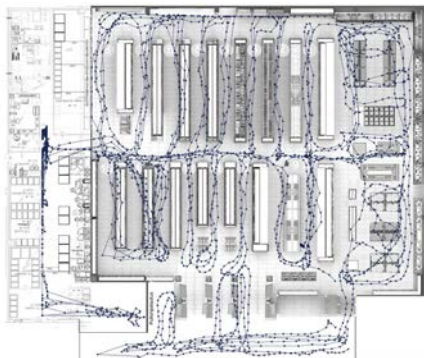
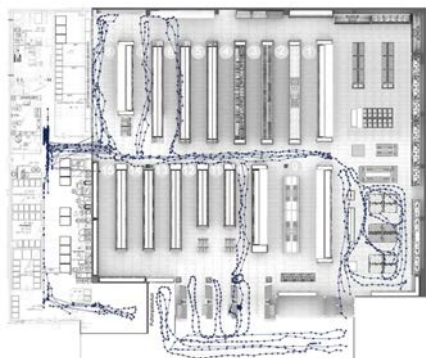
Real-Time Queue Prediction

Customer flow data can also be used to improve the customer experience **by predicting queue formation in real time** and dynamically adding cashiers to respond promptly. This prevents customer frustration in long queues and ensures a smooth customer experience..

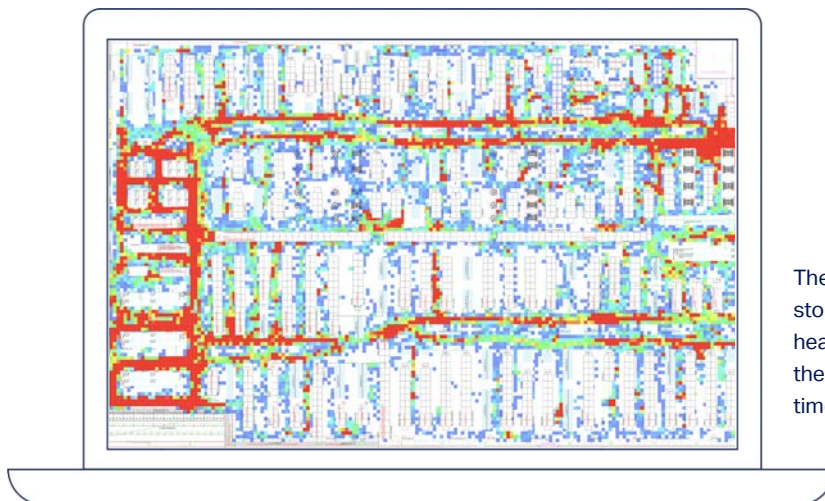


Planning Cleaning

Customer flow data can also be used to plan and optimize cleaning. Cleaning can be effectively targeted to areas with the most customer traffic according to the data. Additionally, cleaning machine route data helps track time usage and pricing cleaning contracts.



The cleaning machine's route can be retrieved with minute precision. The images show the cleaning machine's route on three different days.



The customer flow data from the store can produce an illustrative heatmap showing where there are the most customers at any given time.

4 Reliable and Accurate Data Cost-Effectively



liwari's technology provides accurate and reliable location data and the most optimal way to develop customer understanding within the store in terms of costs and scalability.

Components of liwari's solution:

1. Location tags are attached to baskets and carts.

- Not all baskets and carts need to be tracked because 80% of customers use 20% of the available baskets and carts.



2. After tagging, we see how customers behave.

- Which routes do they take?
- How long did it take?
- Where did they stop?
- How long did they stop?

3. Virtual areas are defined on the store's floor plan.

- Arrival, stay, and departure from areas can be calculated automatically.
- A virtual area can be an end cap, an entire shelf aisle, a specific category, etc.



Summary

All this is achieved with reliable and accurate location data:

Optimizing Daily Work

- Reducing waste
- Easier and more efficient work in the store
- Real-time location data of equipment and increased utilization

Data-Driven Store Management

- Detailed store performance
 - Customer visits by department
 - Department conversion and productivity
 - Working time usage by department
 - Effectiveness of store ads: increase in average customer purchase
- Customer count between entrance and checkout in real-time and over the long term
 - Tracking customer routes and durations
- Improved customer experience: preventing queues
- Optimizing cleaning planning

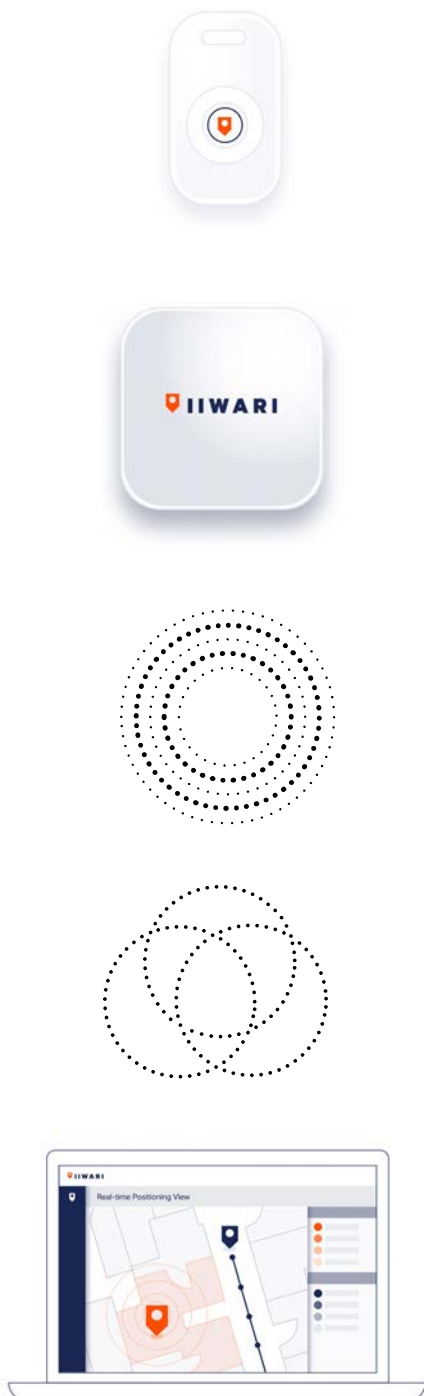


Data helps support store managers, speed up response to trends, and better compare the performance of different stores.

Iiwari Indoor Positioning System

Our technology provides real-time visibility of people, assets and equipment in addition to powerful analytics and planning tools.

Working as a stand-alone or complementing your existing system it provides you with greater insight than ever before.



Signal Flow

The indoor positioning system is built by attaching the base stations to the ceiling or the walls. Tracked objects have a tracking tag that communicates with base stations using UWB (Ultra Wide Band) signals.

The network is designed completely around your particular requirements. We have installed systems in less than 1 business day, it's that easy.

Iiwari Tag

Iiwari tag is a small battery-powered device which can be attached to the tracked object or mobile phone and it communicates with the positioning network.

Base Station Network

Positioning network consists of master base stations and supporting base stations which exchange positioning signals with the tags.

Gateway

Gateway is the core computing device of the site. It manages the local positioning system and connects to cloud infrastructure with network connection. It collects positioning data and forwards it to our cloud infrastructure.

Iiwari Cloud

The data management system stores positioning data, takes care of data processing and manages all sites.

End User App

There is an easy-to-use user interface (Iiwari Dashboard) to visualize positioning data. A public API is available for your software development. Applications are developed according to the customer's needs.



Data-driven store management is
already the future of the retail industry.



We make the invisible visible!

Iiwari Tracking Solutions Oy, a pioneer in indoor positioning, has its roots in VTT and its extensive UWB research. Iiwari innovates cost-effective network solutions and products based on UWB technology for increasingly accurate and reliable indoor positioning.

If you want to know more, please contact us.

Contact us »