

# Innovation and digital solutions

Magnit is constantly searching for innovations and piloting forward-thinking projects to gain additional competitive advantages and create a new shopping experience.

**Our approach to innovation is designed:**

- to enhance our production facilities;
- to streamline business processes;
- to reduce environmental footprint;
- to elevate customer service;
- to fortify our CVP.



## Digital solutions and business innovations

Central to Magnit's innovations is the incorporation of new digital solutions throughout our operational framework and business processes. With a robust digital transformation programme in place, we are committed to refining our CVP with a focus on customers, accelerating new product launches, achieving cost efficiencies by minimising redundant operational roles, unlocking the potential of valuable customer data analytics, and fostering a culture of employee engagement.

**The Company's digital transformation relies on:**

- a flexible, modular business architecture that readily adapts to shifting market demands and customer needs;
- state-of-the-art tools and technologies that foster the creation of composable services to ensure flexibility and speed while minimising costs;
- a product-centric approach that helps find, test and scale creative solutions to emerging challenges.

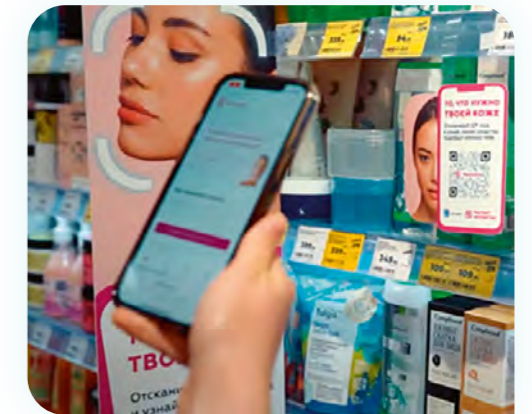


## AI-powered technology for choosing cosmetics

In June 2023, Magnit announced the launch of BeautyScan, a customised cosmetics selection technology, in more than 200 Magnit Cosmetic stores in Moscow and St Petersburg, offering a highly personalised service, improved customer experience, and a focus on maintaining health and beauty.

Pilot tests have indicated a 5% uplift in sales and a conversion rate nearing 70%. In 2024, the Company plans to expand the technology to over 5,000 Magnit Cosmetic stores in the City and Metropolis clusters.

For more details, see the Format Overview section on [p. 60](#)



## AI-based promotions

In 2023, Magnit continued its project to enhance the performance of individualised promotions by relying on in-house ML-based innovations.

As part of the project, target segments and optimal promotional mechanics are selected by AI, and promotions are personalised through a variety of tools such as express bonuses, individual discounts, and bonuses for purchases in a specific product category.

The main advantages of the technology are its high efficiency, targeting based on hundreds of parameters, including consumer-specific offers, as well as the ability to gauge the campaign's performance on a daily basis and swiftly respond to changes in consumer behaviour.

## Machine vision

In 2023, Magnit focused on scaling up its machine vision technologies to the hypermarket chain, building on the initial tests conducted in 2021. One of the technologies is product recognition (Image Recognition). By the end of the reporting year, it was successfully implemented across all Magnit stores in the large Extra and Family formats, covering 20,000 SKUs.

To monitor product display on the shelf, the Company uses a Russian-developed technology based on a neural network that recognises product images from photographs and makes sure that products on shelves match the planned arrangement (planogram). The technology reviews the availability of products on the shelf and the remaining stock in the store, the sequence in which the products are placed on the shelves as well as the front shelf and other layout arrangements. Whenever any errors are detected, staff members are alerted via a mobile app, enabling swift corrections.

In 2024, the Company plans to refine this tool further for use in large store formats, with a new module for controlling price tags and non-displayed products and determining the share of domestic producers on the shelf.

x3 ROI vs conventional advertising campaigns.



The product recognition technology is available in all large format stores.



## Clever Lever smart scales with product recognition

In 2023, the Company started to expand its Clever Lever project, introducing smart scales equipped with product recognition to large store formats. Initially piloted across 37 stores, the technology demonstrated significant efficiency, with losses of goods sold by weight decreasing to just 0.22% of store gross revenue. The innovation was deployed in more than 1,500 self-service scales.

In December of the reporting year, the technology was rolled out to 205 hypermarkets and is already available for customers. With a presence in 242 stores across the chain, Magnit plans to introduce this technology as standard in 2024, expanding it to the remaining geography of large formats and initiating pilots in convenience stores.

## Electronic price tags and media shelves

The year 2023 saw the launch of the Scissors Free pilot (Electronic Price Tags and Media Shelves).

The project concept is to provide convenience stores, Magnit Cosmetic stores and large store formats with electronic price tags for all active SKUs, as well as install media shelves on racks with target product categories. The project involves the collaboration of two technologies: digital price tags and flexible media content management with marketing tools.

The first convenience store with electronic price tags was launched in Moscow in December 2023. In Q1 2024, the rollout plans to continue to cover the entire pilot group of stores in Krasnodar, Moscow and St Petersburg.

As part of the project, the Company will test the system's functionality, swift price management, synchronisation of price updates without the use of manual labour, sales support with videos, and advertisement displays on targeted product racks.

Video recognition on self-service scales is a cutting-edge technology developed in Russia and based on neural networks. It can identify goods without a bag with an accuracy of 98%, and products in coloured or transparent bags with an accuracy of up to 95%. The system's neural network can be trained on popular products within four hours, extending to four days for less common items, without limitation on the number of unique SKUs.



## Extended barcode technology

In the reporting year, the Company commenced the scale-up of extended barcodes (EBC). Unlike traditional barcodes, EBCs carry detailed product information such as expiry dates, production dates, weight or size, and batch numbers. The EBCs we use meet international standards and can be read by the most common modern scanners.

The solution will help improve on-shelf product availability, optimise efforts to control the shelf life in stores, and reduce losses and markdown costs. Leading Russian food producers, including Cherkizovo and EFKO, are among the first to join Magnit in rolling out the EBC technology.

## Technology to check product expiry dates

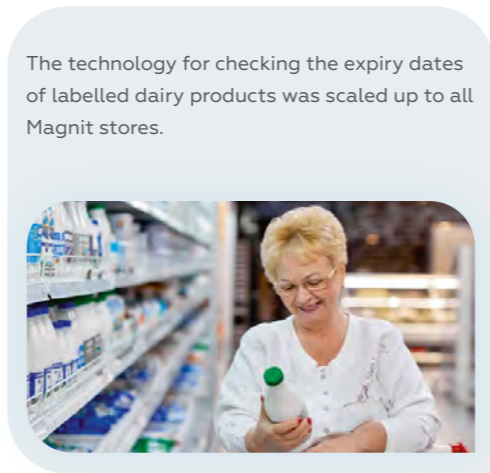
In 2023, the Company launched a new technology to check expiry dates of Chestny Znak-labelled dairy products at the checkout. According to the Advanced Technologies Development Centre, the operator of the labelling system in Russia, Magnit was the first retailer to implement this kind of solution. It obtains information on the product's shelf life directly from the Chestny Znak system during the checkout process and prevents the transaction if the product has expired.

Looking ahead, Magnit, in partnership with the Advanced Technologies Development Centre, plans to expand the technology to include other labelled product categories such as packaged water, enhancing the ability to check expiry dates and prevent sales of expired items.

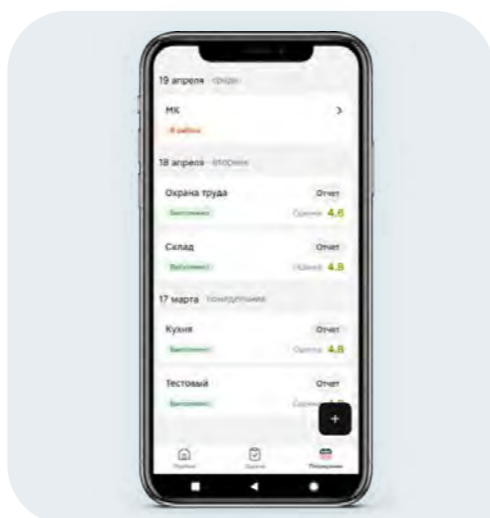
## Mobile app for digital administration and operations management

MDrive is a key tool to manage and assist with day-to-day operations within store teams. In 2023, we focused on expanding the basic supervisor audit process across our core formats. The new UX digitalized all basic operational functions (check-list analysis, audit, instructions). Another promising pilot in Q4 was the communication of customer feedback after offline purchases: now store teams receive real-time feedback and ratings reflecting the in-store shopping experience, allowing for swift service improvements. In 2024, we will strengthen our focus on MDrive's supportive capabilities and offer improvements in the availability of operational analytics, quality and convenience of task completion, routine administrative task automation, and overall app stability.

129 suppliers or 1,550 SKUs in categories such as dairy, cheese, meat deli, poultry, baby food and others, joined the extended barcode project in 2023.



The technology for checking the expiry dates of labelled dairy products was scaled up to all Magnit stores.



## Import substitution for technologies

### Magnit develops proprietary self-checkout software

In the reporting year, Magnit started deploying proprietary software at self-checkouts in its stores, successfully installing the system in some 2,000 checkouts. Developed by our in-house IT team, the software will ensure independence from foreign suppliers, facilitate internal service maintenance, support quick enhancements of device capabilities, and reduce the cost of terminal operation and the need for additional equipment. Also, the software surpasses the performance of Western alternatives, enabling the use of current checkouts without expensive upgrades.

Magnit plans to improve the user interface and customer journey by integrating self-checkouts into a single ecosystem with Magnit's mobile app. This way customers will be offered a seamless and intuitive interaction with Magnit's various services.

In 2024, we anticipate all self-checkouts will operate on this proprietary software.

### Transfer of loyalty programme to Russian-developed solutions

The transition of our loyalty programme to the Russian-developed Manzana platform in 2023 was a major milestone for Magnit. The new solution is powered by a cloud-based technology tailored to the Company's needs.

The transition unfolded over several months: the Company started to migrate users in March, gradually connecting more cardholders to the new system. Throughout this period, customers retained access to bonus accruals and spending,

card discounts and other features, including the ability to register new cards. We preserved all historical data on accumulated points and bonuses, as well as analytical data. Concurrently, the Company continued enhancing its loyalty programme, introducing new mechanics. For example, the number of product categories available for customers to choose from was expanded and segmentation was refined, resulting in a 30% increase in effective communications without compromising customer response.

>30 thous.

checkouts to be installed in 2024 in line with each format's demand

Magnit to become Russia's leading retailer in terms of fleet of devices



## Unmanned trucking technology

The Company's strategy is aimed at improving the efficiency of its operations, with a special emphasis on cutting-edge robotisation solutions. Magnit is also exploring the prospects of using robotic solutions in warehouse logistics, which is especially relevant given the complexity of logistics and growing freight volumes. In the reporting year, Magnit launched unmanned cargo deliveries on the M11 Neva highway. In addition, Magnit takes part

in an initiative to test unmanned logistics corridors on the M11 Neva highway as part of a regulatory sandbox regime programme.

For more details on this project, see the Logistics and Transport section on [p. 108](#)

## Looking ahead



### • Voice assistant in transport logistics

As part of its strategy to enhance transport technologies, Magnit successfully adapted and piloted a voice assistant designed to monitor transport statuses. This innovative solution will help provide precise and timely information, enabling faster response to unforeseen logistics challenges.

### • Platform for recruiting general staff

Magnit is testing a new service for filling temporary roles related to functions such as stocking shelves, assembling orders, or servicing pick-up points. The service is expected to be particularly effective during peak periods when the demand for temporary workers spikes.

### • Leveraging AI technologies to save energy costs

The Company will continue to explore energy efficiency solutions in 2024.

### • Business process robotisation

In 2023, Magnit successfully tested industrial robot cleaners in stores, assessing their effectiveness and suitability for wider use within the Company's premises.

## ESG innovations

### Green packaging

Magnit is actively involved in initiatives to reduce its plastic and paper footprint. We are fully aware that a significant proportion of retail waste comes from packaging materials. Consistent efforts to integrate eco-friendly practices into our business processes and improve the sustainability of our packaging are major components of our sustainability strategy.

Packaging is the key source of waste for a retail chain. This is mostly cardboard, polyethylene film, and plastic crates for fruit and vegetables.

We efficiently collect, process and recycle between 95% and 99% of all recyclable plastics, film and cardboard from our retail stores and distribution centres.

### Voluntary standard for recyclable POSM<sup>1</sup> equipment

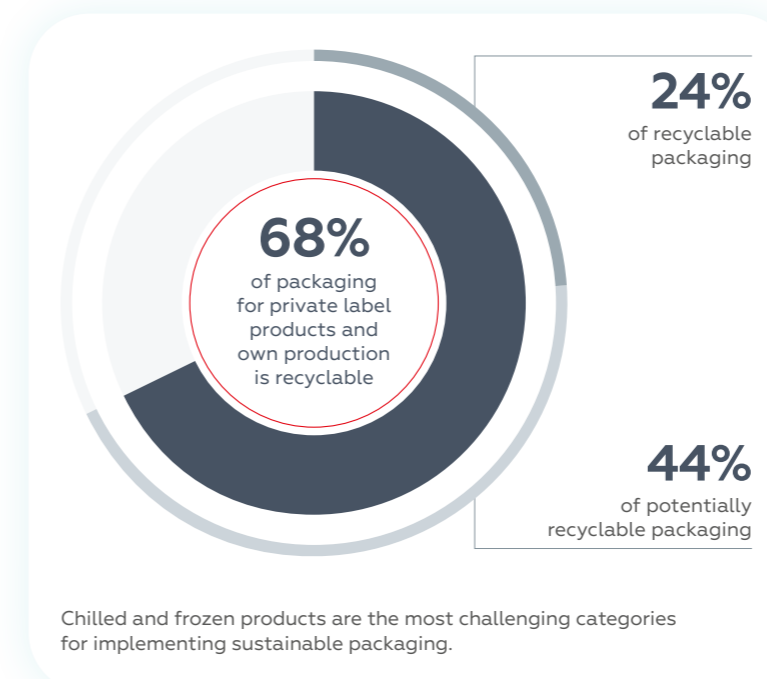
In 2023, Magnit and its partners developed Russia's first voluntary standard for recyclable pre-packs. Pre-packs are branded product displays that are delivered to stores with products already stacked. The display racks are mainly made up of cardboard, but the strong presence of additional materials such as metal, plastics and occasionally concrete hinders their recyclability. The new standard encourages suppliers to eliminate the use of metal and plastic elements and lamination in these displays. Pre-packs adhering to these guidelines are expected to be marked accordingly. The adoption of the standard is set to avert the production of 2.4 million kg of waste (400,000 pre-packs), reintegrate cardboard into a circular economy, and lessen the volume of solid municipal waste produced.



### Advancing eco-friendly consumer packaging

We are committed to incorporating green solutions across all areas of our operations, including both offline and online sales channels. To achieve this, we actively participate in initiatives promoting eco-friendly packaging.

In 2023, Magnit and its suppliers continued to implement the Voluntary Sustainable Packaging Standard (ECR Russia), which is based on international and Russian best practices and tailored business recommendations, and takes into account all applicable requirements of Russian laws. The initiative is expected to considerably reduce the volume of non-recyclable retail waste.



<sup>1</sup> Point of sale materials are materials that help promote a brand at the point of sale.  
<sup>2</sup> FMCG – fast moving consumer goods.

### New green packaging standard for e-commerce

In 2023, Magnit, together with leading e-commerce players, FMCG<sup>2</sup> companies and ECR Russia, developed voluntary guidelines for sustainable transport packaging tailored to e-commerce services and online retailing. The guidelines will be an effective self-assessment and self-regulatory tool for online retailers, promoting the selection of functional packaging options that minimise environmental impact and waste production.

The guidelines categorise packaging into three traffic light groups based on environmental friendliness: "best solution" (green), "acceptable" (amber), and "recommended to avoid" (red). The classification covers all major categories of transport packaging (boxes, bags, film, wrapping, etc.) except for reusable packaging (couriers' backpacks).

When developing the standard, we took into account the possibility of producing packaging from renewable materials, the use of recycled materials in its production, easiness of sorting, and other parameters.

In its operations, Magnit relies only on packaging that complies with the new e-commerce standard.



## Information security and personal data protection

Magnit's information security is based on a set of interrelated organisational and technical tools which comprise an integrated information security management and assurance system. Our comprehensive approach enables us to protect ourselves against modern information security threats, comply with Russian legal requirements, and prevent financial, reputational and other damage. The Company's information security system is designed and developed in line with global best practices.

Magnit has a formalised procedure for internal auditing, which falls within the remit of a dedicated department. We regularly assess information security risks and test our information systems on a quarterly basis.

### Key focus areas of information security

#### Cyber security system

The Company has a set of systems and services to protect against cyberattacks, with solutions in place to identify and eliminate vulnerabilities in IT equipment, detect virus activity and zero-day attacks<sup>1</sup>, as well as monitor and respond to security incidents. Magnit monitors the integrity of software architecture across all of its external IT services. The Company's IT team performs ongoing updates to network devices, servers and software, as well as routine scans of all external Company services for known vulnerabilities.

All of Magnit's web services are protected through tools designed to detect and block network attacks on web applications. We actively employ Anti-DDoS<sup>2</sup> solutions, and regularly scan open internet ports.

Due to the withdrawal of foreign vendors of security systems, in 2023, we tested and adopted domestic solutions for security orchestration, automation and response (SOAR). The Company also began replacement of its security information and event management (SIEM) and vulnerability management (VM) systems.

#### Anti-fraud

Magnit has established a transparent framework to monitor and respond to incidents related to loyalty programme bonus points. IT experts constantly analyse open-source intelligence (OSINT) to detect new attack vectors, implement and improve anti-fraud equipment for blocking illegitimate debits and bonus point accruals, build processes for analysing the Company's projects under development and implementation for minimising the risks of attacks, etc.

#### Development of IT security competencies

One of our information security priorities is to make employees more aware of cyber security rules. In 2023, the focus was set to develop practical skills for navigating the digital environment safely. Employees receive interactive training and are subjected to simulated phishing attacks to build practical skills. The use of gamification promotes employee engagement in the learning process.

#### Work from home

In 2023, we conducted a functional analysis of Russian remote access VPN systems and bench testing of products. A pilot project is planned for 2024 in several branches of the Company.

#### Secure development

To ensure security throughout software development lifecycle, an application security orchestration and correlation (ASOC) solution was implemented in 2023.

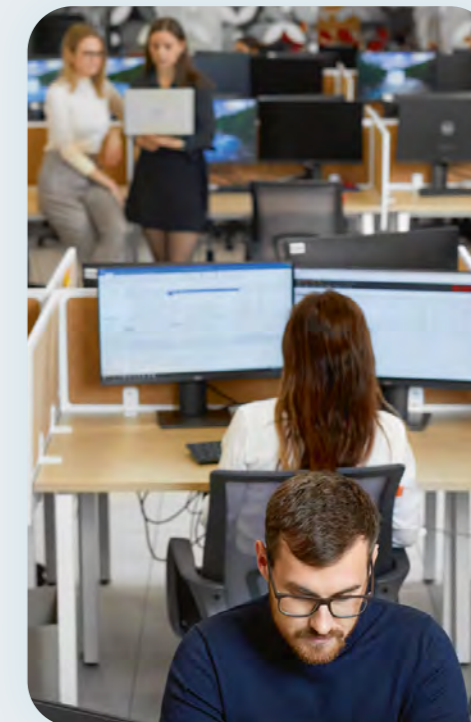
#### Protection of personal data

We have a systematic approach to protecting the personal data of all stakeholders and continuously monitor all existing and planned information systems. The Company makes consistent efforts to raise awareness of employees in information security and personal data protection, with training materials, videos and information security courses now developed and available. Magnit also approved corporate regulations and instructions on personal data processing and protection.

Employees of the IT Department working with user data are duly trained on a regular basis. The Company has automated the collection of consents to personal data processing.

We maintain a log of security incidents in information systems for processing personal data and inquiries regarding their processing and storage.

In addition, internal and external audits assess risks, analyse processed data, and develop and update a threat model for information systems and technical solutions to eliminate such threats.



### Plans for 2024



In 2024, we will continue to develop our information security systems to prevent new threats, including further automating of processes, implementing import substitution of information

security tools, standardising processes and approaches in our development teams, and developing DevSecOps<sup>3</sup> processes.

<sup>1</sup> Zero-day – an exposed software vulnerability or malware with no identified means of containment.  
<sup>2</sup> Anti-DDoS is a tool of protection against DDoS attacks, which aim to disrupt the computer system through a constant stream of requests.  
<sup>3</sup> DevSecOps (development, security and operations) is a modern development practice that enables organisations to rapidly build and release secure applications.