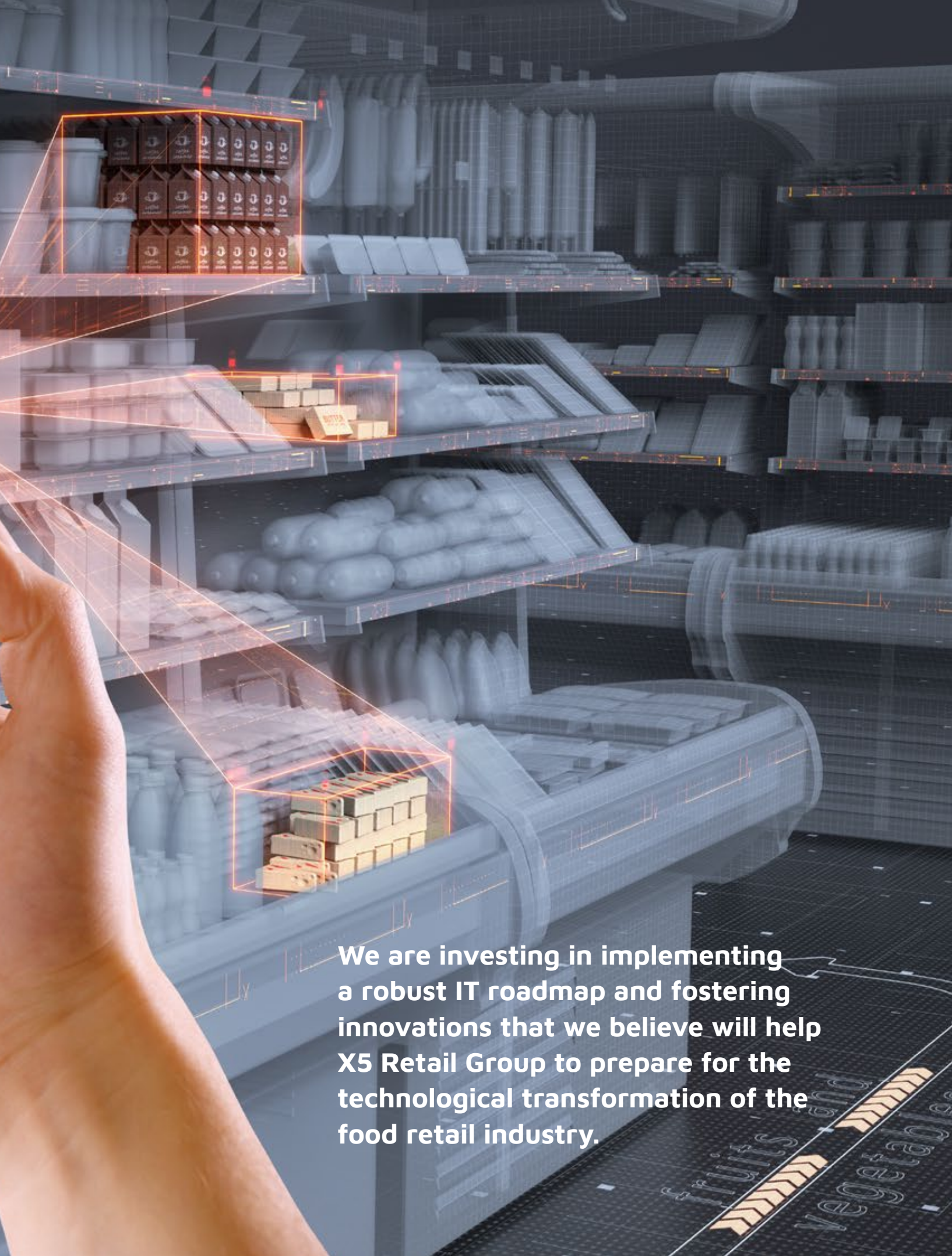


# Innovating in retail







**We are investing in implementing a robust IT roadmap and fostering innovations that we believe will help X5 Retail Group to prepare for the technological transformation of the food retail industry.**

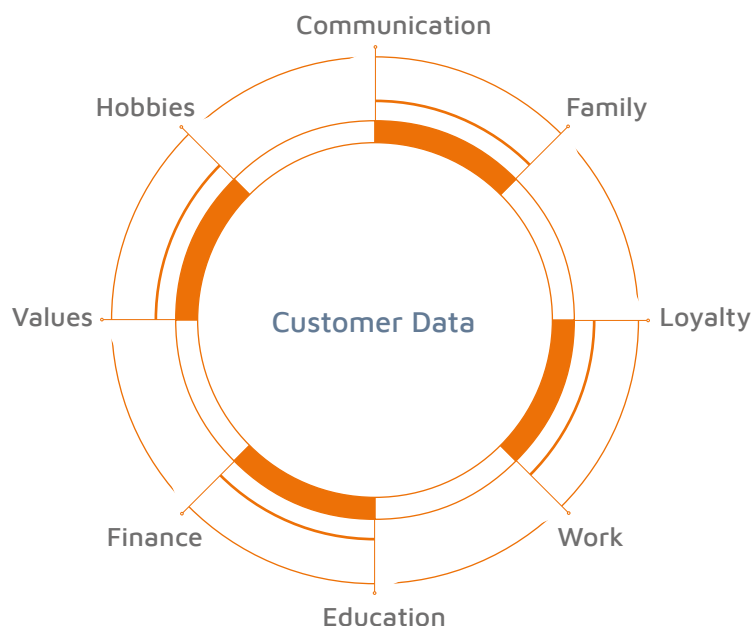
# Innovation and information technologies

## Innovation

In the next three to five years, the retail landscape will likely change dramatically with artificial intelligence (AI), automation and other technologies, as well as the rapidly evolving omni-channel shopping behaviour of consumers driving this change. X5 intends to be at the forefront of the AI- and technology-driven transformation of our sector, both by developing its own big data and analytics capabilities and by implementing new and promising technologies as they emerge.

## Innovation strategy

Innovation and technology will play key roles in the successful and sustainable development of X5 Retail Group. Our strategy includes focussing on innovation as a key source of growth. We aim to become a leading innovator in the Russian retail sector in the next several years.



We are gearing up for a future where customers will demand more convenience and personalised services, which will be made possible by emerging technologies and AI. Our ability to offer these services effectively and efficiently will play an increasingly important role in consumers' choice of where to shop and what to buy. X5 bases its innovation strategy on three key pillars that we believe will help us do more than just keep pace with global leaders in retail innovation

## Customer-centricity

one of the core areas of focus for our technology and innovation efforts is to improve the omni-channel customer experience and our overall CVP with the help of AI, big data and IT systems ranging from real-time personalisation of offers, to shopping experience customisation, to assortment and pricing optimisation based on localised customer needs and preferences.





## Increased mobility

we are helping customers who want greater freedom and mobility by launching online shopping offerings in core markets (Moscow in 2017 and St Petersburg in 2018), while also creating mobile apps that help enhance their experience when they are in stores.

## Data-driven

we are developing and enhancing our big data and analytics capabilities, which help X5 operate more effectively and efficiently. This ranges from optimising our store locations by leveraging our unique GIS system, to offering customers a more individualised experience based on their personal shopping habits and preferences, to optimising our supply chain network and transportation routes, leveraging the best-of-breed analytical and optimisation tools.

## What we did in 2017

One of the key initiatives in 2017 aimed at supporting this drive for innovative leadership was X5-Lab, which unites employees from the three retail formats and the Corporate Centre into an innovation hub.

To ensure a continued flow of innovative solutions and technologies as part of its innovation strategy, X5 launched strategic partnership programmes with the Internet Initiatives Development Fund and the Skolkovo Foundation. These partnerships helped X5 identify and review several hundred startups offering innovative retail solutions and technologies. Thanks to these partnerships, we managed to select and launch several dozen joint pilot projects with high-tech companies to test their most advanced solutions and technologies at X5. Projects were launched in areas like pricing, assortment, and OSA optimisation using computer vision technologies, customer shopping experience enhancement leveraging in-store video-analytics technologies, as well as a number of in-store operations, finance and HR process improvements leveraging automation and robotisation.

## Other highlights we achieved in 2017 include:

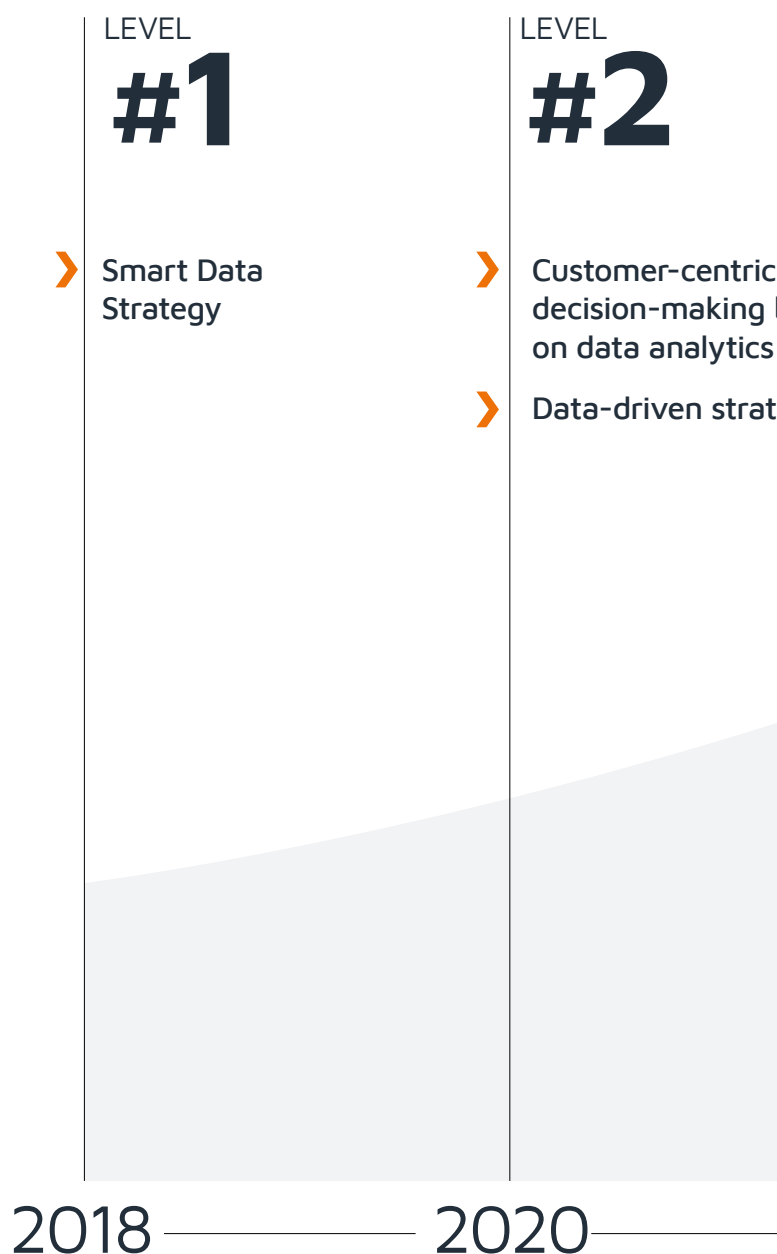
**Big data:** We launched a data analytics platform that enables X5 and key suppliers to analyse the effectiveness of promo activities by measuring the impact of targeted online advertising on offline sales through anonymised data about X5's customers.

**Omni-channel retailing:** Perekrestok Online, our own online supermarket platform, was launched in Moscow in April 2017 and is expected to roll out in St Petersburg in 2018; Karusel Online was launched in 2017 in partnership with a number of delivery service operators that provide in-store pickup and home delivery services for our customers.

**Image recognition:** This newly developed software will enable us to monitor the consistency of shelf placement with plansograms, assure shelf availability and optimise store layouts.

**Robot Vera:** This automated recruitment system independently searches for CVs and potential job applicants online based on a predetermined set of parameters, then initiates contact with automatically selected candidates to invite them to apply for positions available at the Company. Interested candidates are then transferred to a recruitment specialist to discuss specific terms and conditions.

X5 aims to create a personalised real-time monitoring system of customers' needs, and to transform itself into a next-generation food retail company. Today, we are already implementing a smart data strategy, and we aim to adapt rapidly in the years ahead to enhance our ability to put customers at the centre of everything we do.



## How we manage our innovations initiatives

Management of our investments in innovations is handled by the Corporate Centre, while each of the formats is responsible for detailed requirements and customisation, customer loyalty programme management and other software they use to improve their business efficiency.

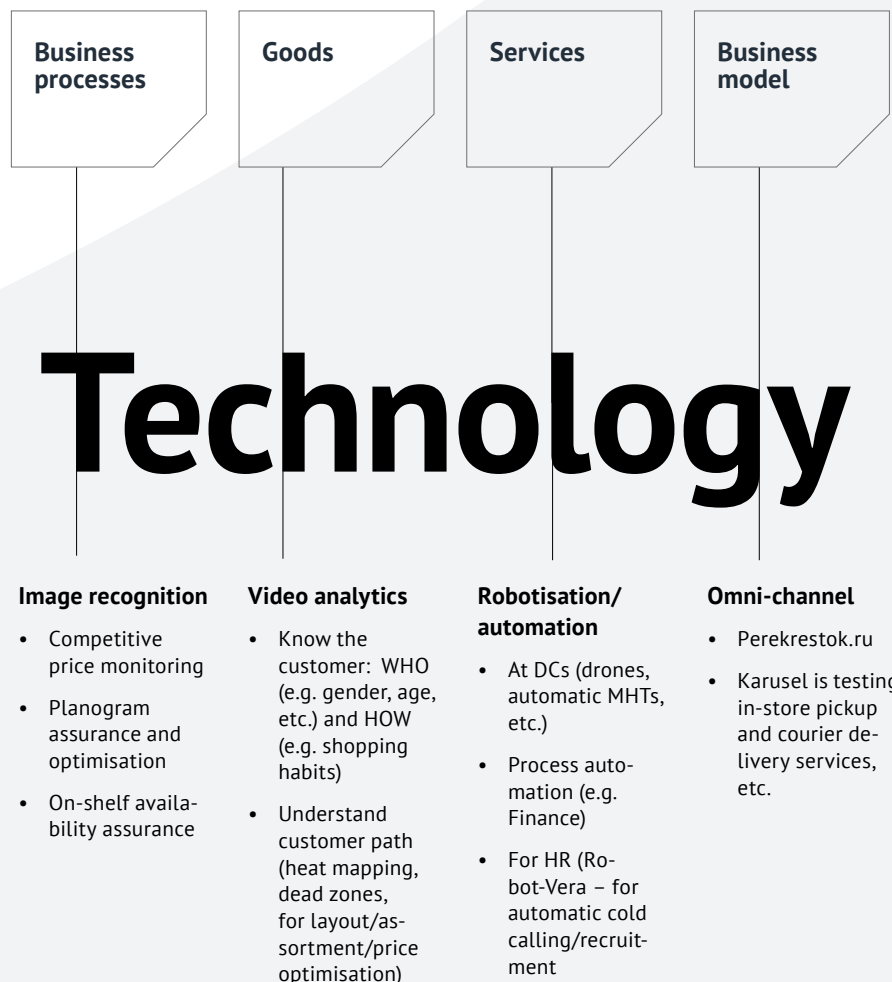
The five key areas we plan to focus on in our drive for AI- and technology-driven innovation are goods, business processes, services, business models and technologies. With technologies at the core, each of these areas will help make us a stronger and more sustainable leader in our sector.

LEVEL

# #3



“Next-Gen Retail” – real-time monitoring system of individual customer data



# Technology

After 2020



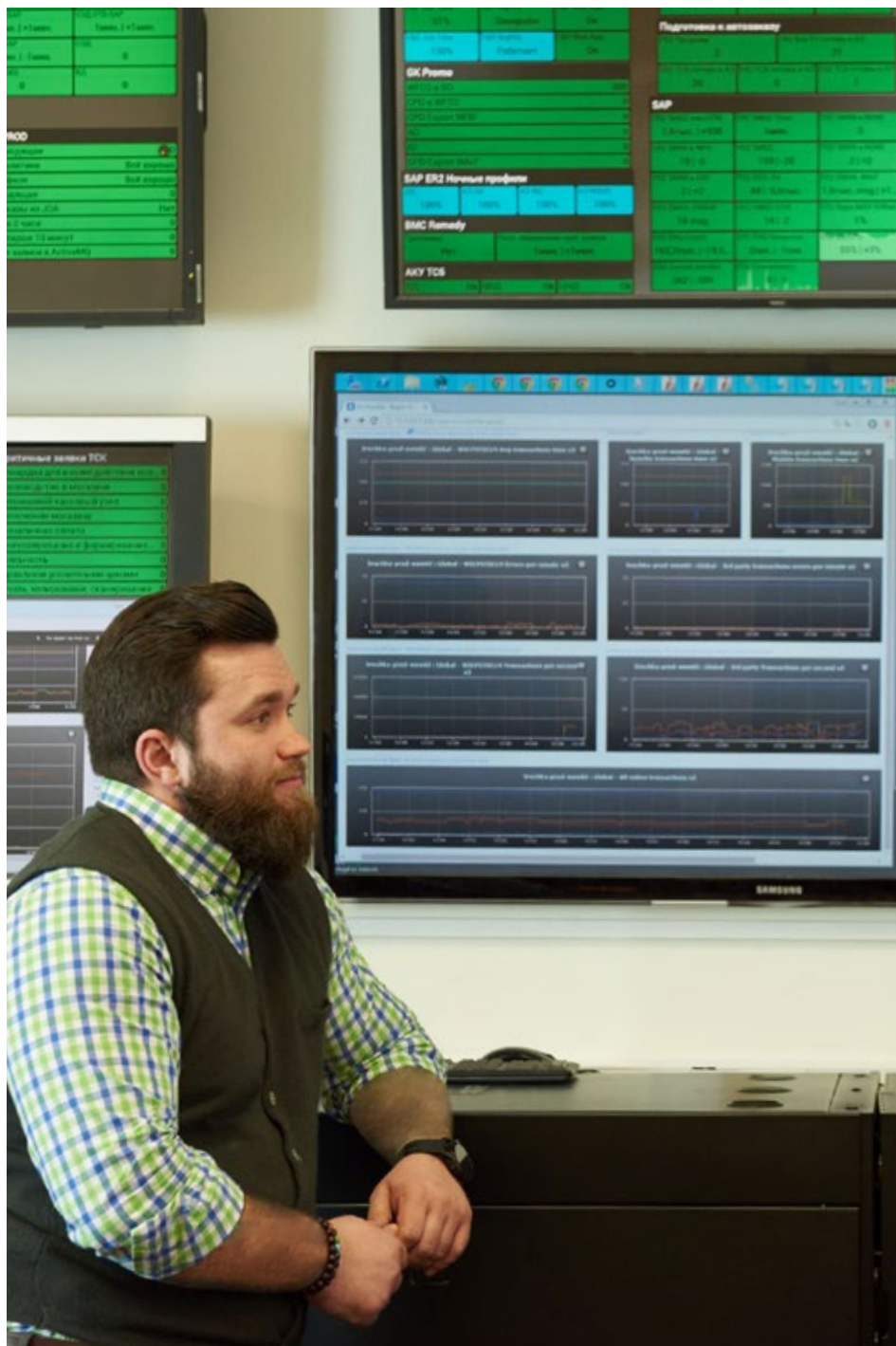
## Information technologies

Successful development and transformation as an innovative business is not possible without reliable and efficient IT platforms. Our IT systems both support existing operations and act as the core for our innovation efforts.

X5 Retail Group's Information Technology Department manages X5's IT systems and subdivisions, as well as ensuring the integrity of the architecture and infrastructure for innovations that require IT resources. An innovation team has been created within X5's IT department to monitor and analyse new technologies and test innovative solutions. All innovative solutions are reviewed to ensure compatibility with the Corporate Centre's IT architecture and infrastructure.

### 2017 highlights

- **New IT roadmap:** we developed and approved a new roadmap for the development of X5's IT systems through 2020, with the aim of improving the stability of the Company's IT infrastructure in order to support the continued fast pace of organic growth, and with a particular focus on projects to optimise the current information systems and improve the efficiency of IT processes.
- **Reliability and resilience:** we approved a new strategy for IT continuity and took steps to further improve the resilience and stability of the Company's information systems, including reserve data storage sites, core architecture and new equipment purchases.
- **Capacity for growth:** We secured the ongoing organic growth of the SAP ERP system through 2020 and introduced a capacity assessment process to ensure the organic growth of other information systems. We also established the capability to quickly add new resources with IaaS systems.
- **Enhancing commercial activities:** we continued to develop loyalty programmes that offer personalised promos based on real-time processing of customer preferences. Pyaterochka's Helping Card (Vyruchai-Karta) loyalty programme, which was rolled out in 2017, already had over 20 million active users by the end of December 2017.







## Integrating regulatory systems

In 2017, we continued implementation of Company-wide projects to automate the monitoring of alcohol inventory as part of the Unified State Alcohol Information System (EGAIS). Changes affected each of X5's retail outlets: as of the end of the year, the accounting and reporting of alcohol inventory across the Company's operations were fully in compliance with updated requirements, and there were no cases of alcohol licences being revoked due to a failure to properly monitor and report on inventories.

Another important project launched in 2017 was Mercury, which is required for compliance with new Russian legislation on the registration and monitoring of meat and poultry products. X5 implemented a platform that is integrated with the state's FGIS Mercury system for the recording and storage of electronic veterinary documents. We automated the main processes for processing documents at X5's stores, helping to reduce costs through the use of the FGIS Mercury web interface.

In line with Federal Law No. 54, which requires that retailers transmit information directly from each cash register to the Federal Tax Service in real time, X5 updated over 40,000 pieces of equipment after becoming one of the first companies to cooperate with the Tax Service on piloting a comprehensive solution. After nine months of testing, the Company successfully implemented its automated cash control solution across its retail operations, and checkout productivity has not been affected by the updates.

## Plans for 2018

In the year ahead, we will continue to implement our activities according to the IT roadmap to 2020. This includes:

- Launch of IT infrastructure for Big Data development
- Implementing projects related to adherence with new legislative requirements (Mercury, EGAIS, etc.)
- Modernisation of the GK software trading system and the transfer of large formats from Numero Quatrum (NQ) to GK software
- Transition to the SAP PI enterprise service bus for all stores Company-wide

We plan to develop and implement a big data platform and projects, and we continue to automate routine tasks carried out by Finance Department staff.