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CASES

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MANAGEMENT

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DIY
BUILDING MATERIALS

CASE
PERDICTIVE QUEUE ANALYSIS

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LINK QUEUE MANAGMENT

Predictive Queue Monitoring

Real-time supervision

- Improved customer retention
- Cost effective staffing
- Less lost sales
- Optimized servicing performance
- Industry leading video analysis technology

AI Based predictions

- Real-time notifications
- Prevent high queuing before it happens
- Predictions on queuing levels and store occupancy
- Weekly queue and occupancy forecasts

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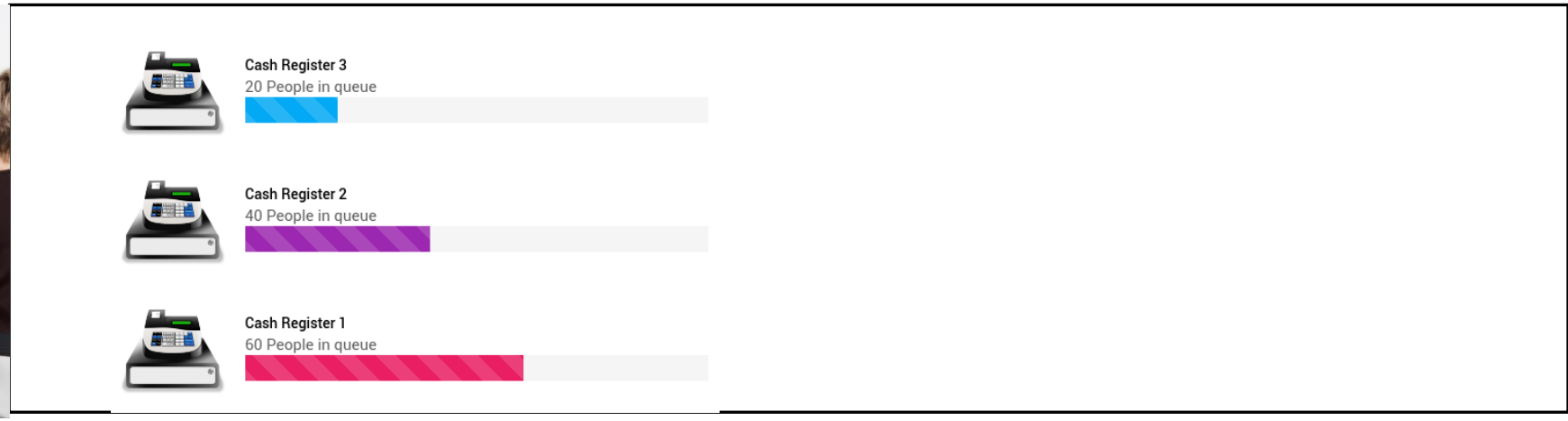
WHAT IS PREDICTIVE QUEUE MANAGEMENT?

With our software we count shoppers into a store –and out of a store. In this way we know average shopping time and can predict when there will be queue – and when the queue goes away



The system detects the number of people standing in the queue region in real time

HOW WE MEASURE QUEUE MANAGEMENT!

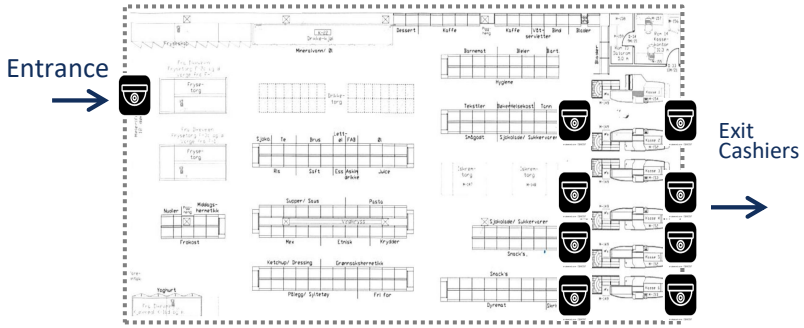
Install people counters at each entrance

HOW many people are arriving at the store?

The people counters, heat-map systems and queue management are based on our own RetailFlux Software. We use hardware from external suppliers and our software are compatible with most security cameras.

Install people counters at each exit

How long do the shoppers stay at the store? When we know this we also know When it will be a queue.



Our queue management system calculate average shopping time. When we at any time knows how many shoppers that are inside a store, we are able to detect and predict queues real time – and staff up & down accordingly.

Real time Queue management

Staff up and staff down the cash registers based on predicted queue

Shopkeepers, employees and management get all queue predictions for their store on their smart phone – real time.

WHY YOU NEED TO FOCUS ON QUEUE MANAGEMENT!

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You basically need to focus on queue management of the following reasons

EMPLOYEE MANAGEMENT

Staff up and staff down. Our predictive queue management system will at any time make sure that the queue is at an acceptable level – and tell when to staff up and when to staff down. To staff down will save the retailer for unnecessary labour and working hours – hence this will cut quite some costs.

SERVICE LEVEL

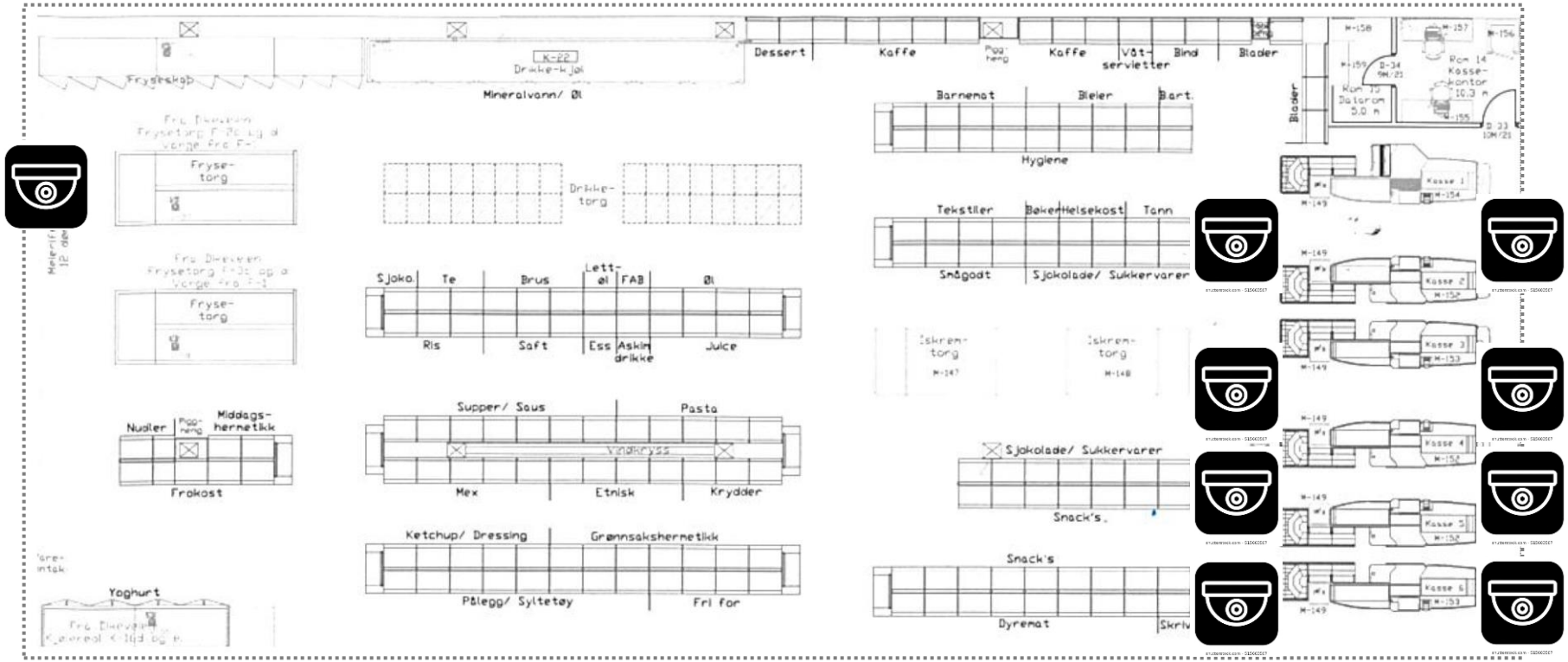
Shoppers accept to stand for a short time in a queue but not long for long. If a retailer has problems with long queue, shoppers will soon avoid this store. Standing in long queues is perceived as bad service. Short queue of 2-4 people is acceptable.

SELL MORE – PERFECT QUEUE .

Shoppers accept to stand in a queue for a certain time – and a short time in queue is enough for them to buy one item more. A retailer should in other words have a certain queue – for shoppers to buy more.

QUEUE & AVERAGE SHOPPING TIME

Entrance



Exit Cashiers

People Counters

AVERAGE SHOPPING TIME

- Predict queue &
- Staff up & staff down

QUEUE MANAGEMENT

- Correct staffing at every cashier

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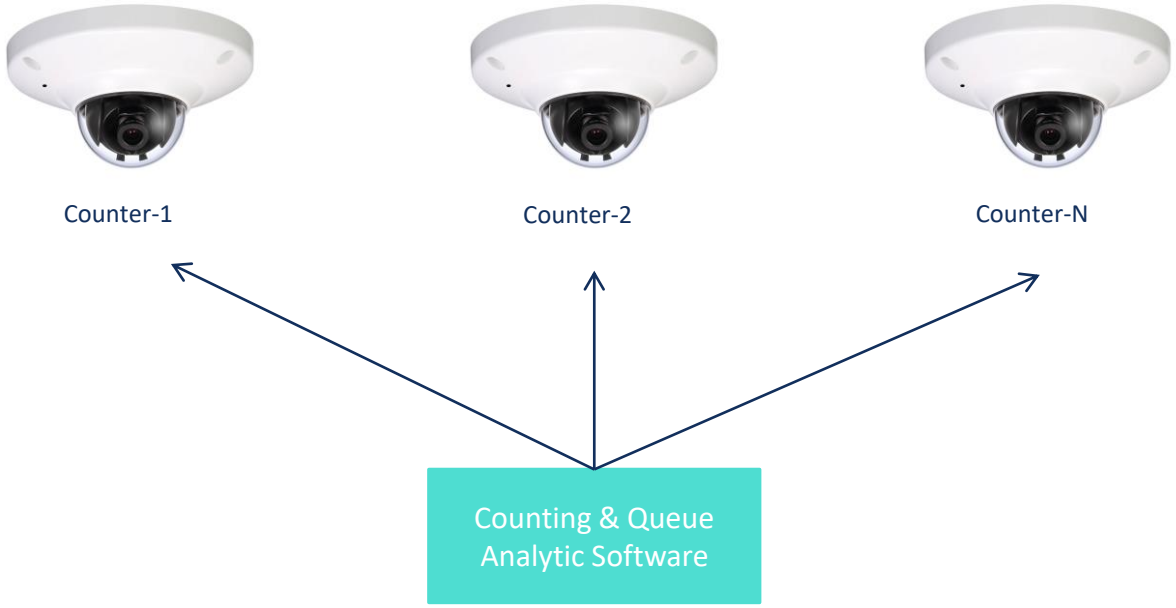
A SHORT OVERVIEW OF THE SYSTEM:

- The system uses a combination of counting and queue detection technology through video-analytics.
- In total, 16 cameras have been installed in the store. 7 counting cameras and 9 queue cameras that combined covers all entrances/exits to the store and all 15 cashiers.
- The system is generating data in real time (per every three seconds) and uploading the data to the cloud every 15th minute to be available for further analysis

PREDICTIVE QUEUE SYSTEM



THE SYSTEM MEASURES A NUMBER OF DIFFERENT PARAMETERS.

The most noticable parameters are:

Number of people entering the store / Traffic to the store

• Number of people in-store / Store occupancy in real-time

• Average shopping time / Customers in-store shopping time

• Number of active cashiers / Cashiers being utilized by staff in real time

• Queue length & service time / Queue monitoring in real time

OCCUPANCY & AVERAGE SHOPPING TIME

RELEVANT DASHBOARDS

PEOPLE IN QUEUE:

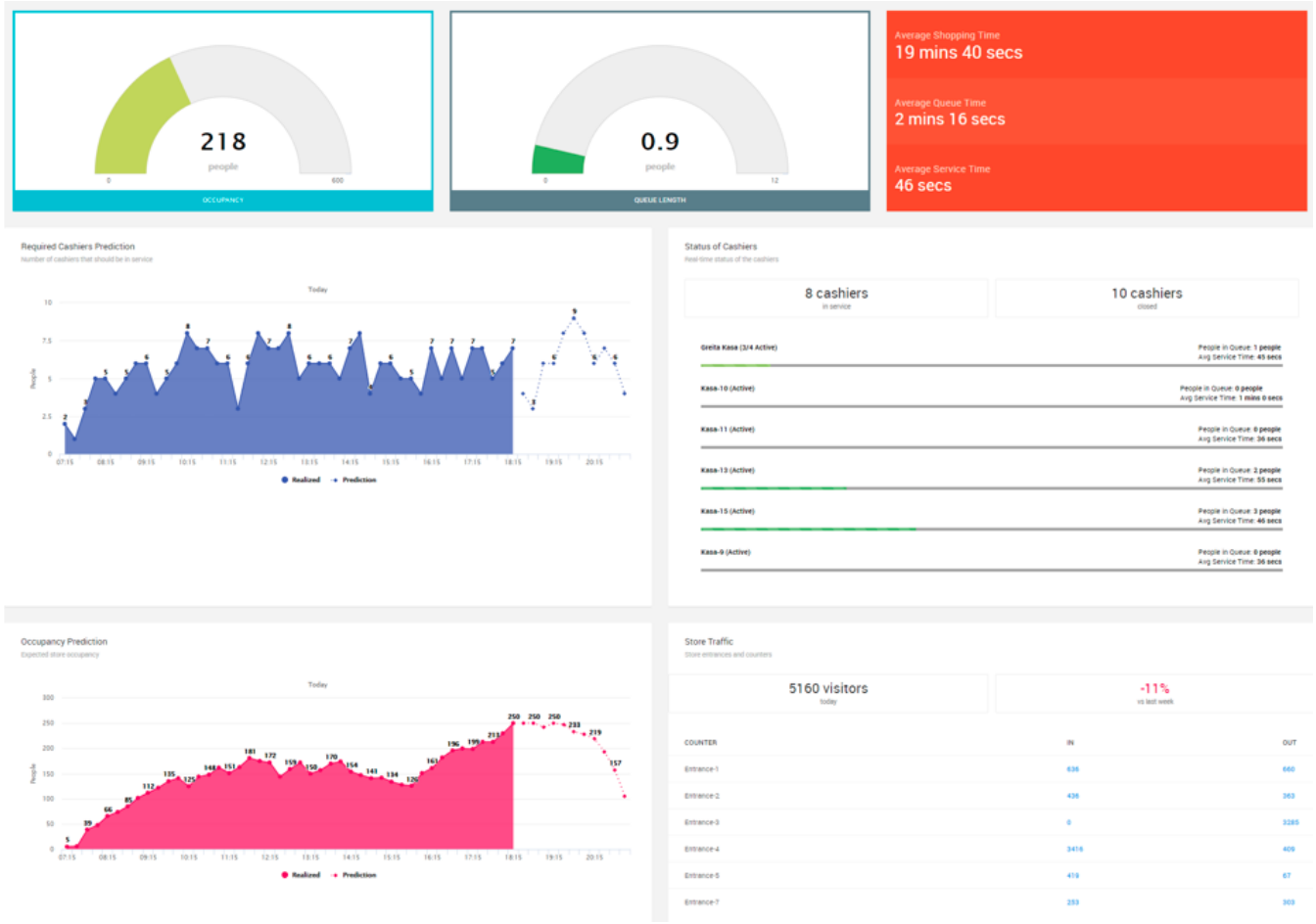
The system considers the area around the cashier and is measuring how many shoppers are moving within this area. The system is differentiating between staff sitting in the cashier, shoppers being serviced in the cashier and shoppers standing in the queue waiting to be served by the cashier. The system can then accurately measure how many shoppers are standing in the queue.

QUEUE LENGTH:

By measuring how many people are standing in the queue and waiting to be served by the cashier, the system can then calculate the actual queue length per cashier. This is important in order to predict how many cashiers should be open to prevent a queue greater than the target queue length.

TARGET QUEUE LENGTH:

This is a fixed parameter that the store can select in order to have the system generate recommendations on what to do in order to avoid a queue length greater than X. For the time being this is a fixed value equal to four (4).



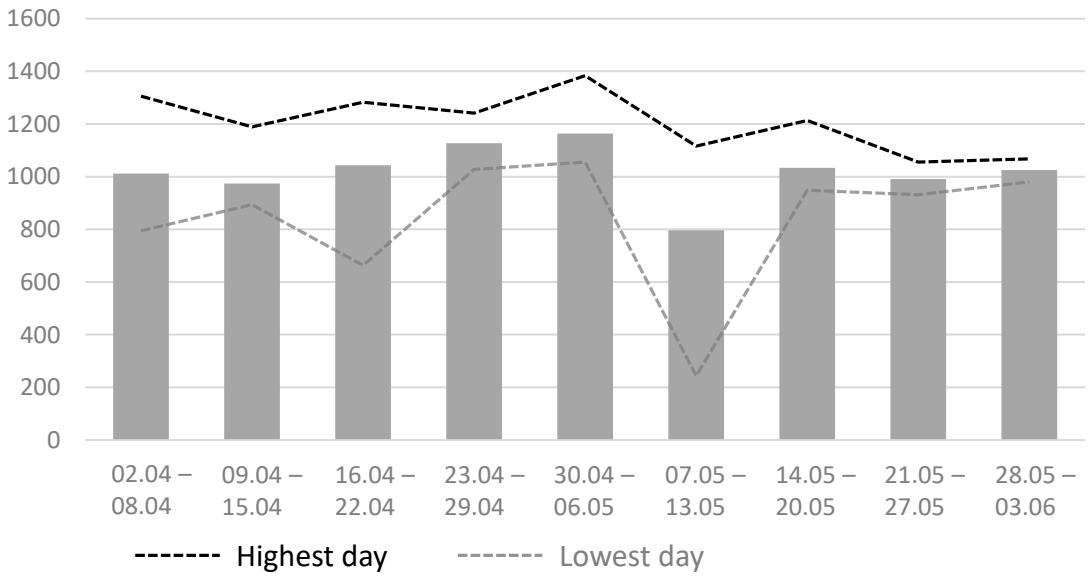
GET ALL DATA REQUIRED TO IMPROVE IMMEDIATELY

Lower cost and improved shopper experience

Trends on traffic averages and extremes

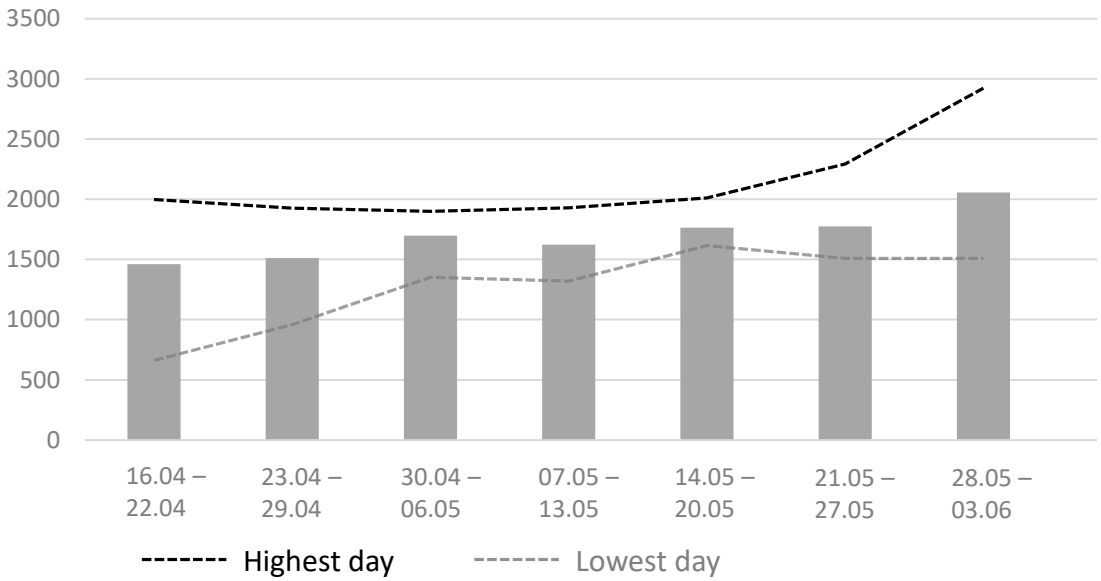
Store 1

Daily visitors averages, min, max by week



Store 2

Daily visitors averages, min, max by week



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Queues

28.05 – 03.06

Store 2	Average queue length	Daily queue length min – max	Average service time	Service time min – max
Cashier 1	5	2 – 7	87,6	50 – 105
Cashier 2	3	2 – 5	74,2	43 – 91
Cashier 3	2	1 – 3	46,1	38 – 52
Cashier 4	2	1 – 2	42,2	36 – 47
Cashier 5	1	0 – 1	41,8	23 – 53
Cashier 6	0	0 – 1	36,2	19 – 42

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Traffic in Store 1

28.05 – 03.06	Weekly traffic	Daily traffic min – max	Average shopping time	Top – bottom shopping time
Store 1	6 152	980 – 1 067	7,1 min	3 – 21 min

Traffic in Store 2

28.05 – 03.06	Weekly traffic	Daily traffic min – max	Average shopping time	Top – bottom shopping time
Store 2	14 400	1 509 – 2 924	17,1 min	4 – 24 min

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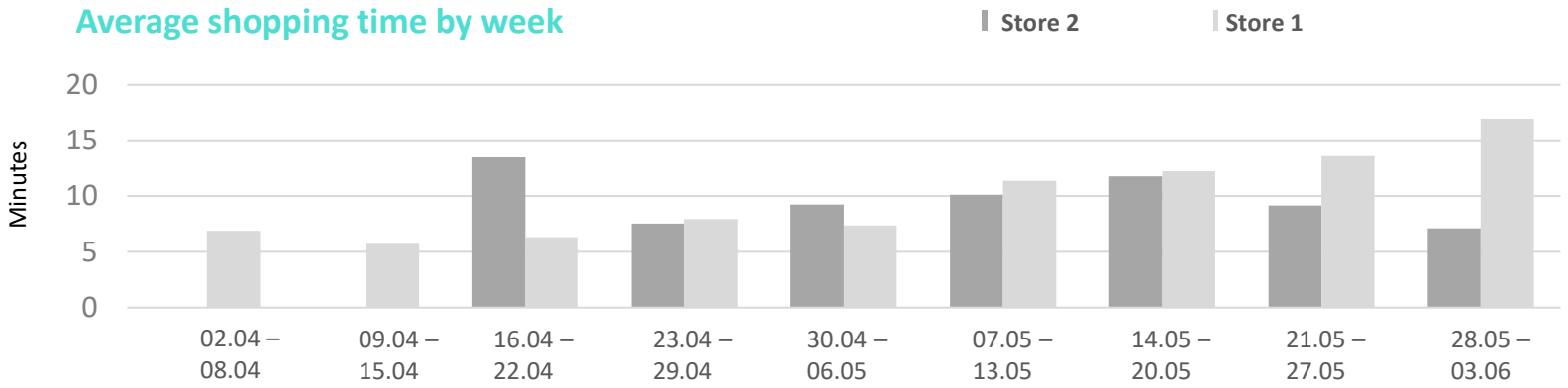
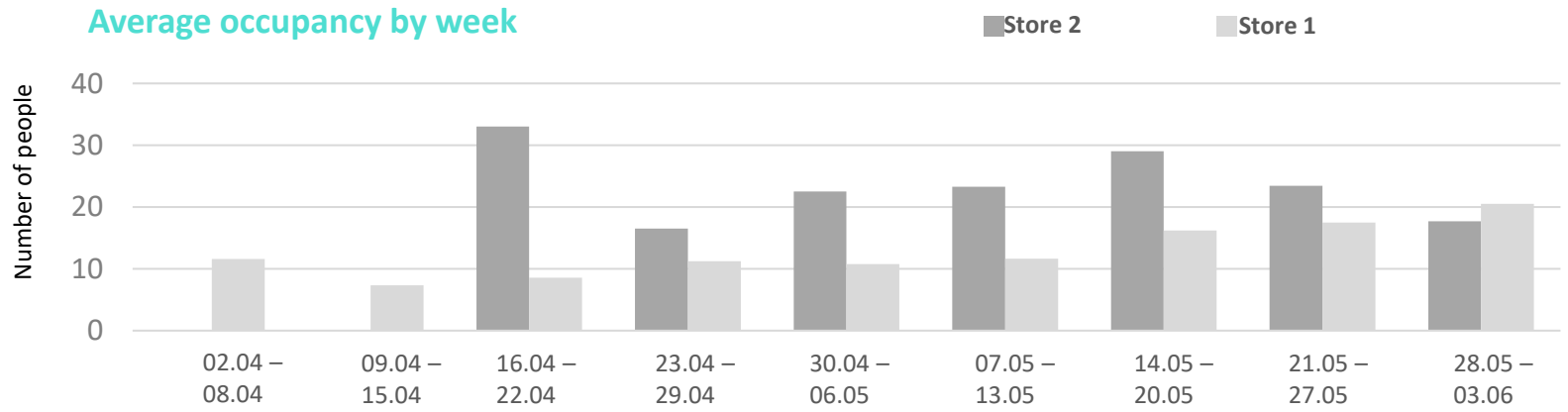
Occupancy data





Average shopping time

In last month the two shops show opposite trends regarding average shopping time. In **Store 1** shopping time grew up close to 17 mins,
whereas in **Store 2** declined
down to 7,1 min.

Occupancy

Occupancy shows number of people being in the shop at the same time. Average occupancy is strongly correlated with the shopping time.
The longer shopping time the higher number of people in the shop.
So the results of occupancy
measures in both shops reflect the changes in shopping time.

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