Forecast-based Workforce Optimization

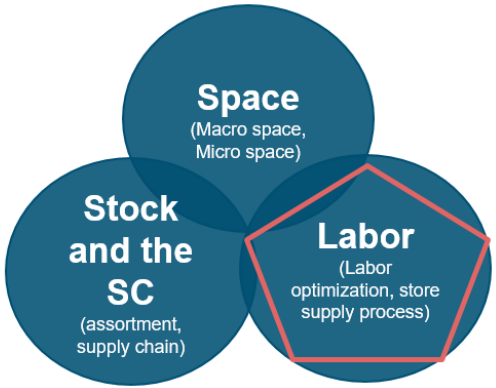
RELEX Seminar in Tallinn

19.4.2018

ZENOPT

RELEX joint venture with Zenopt

- Zenopt: start-up specialized and experienced in store operations optimization and personnel management
  - Workforce Optimization (WFO) and
  - Workforce Management (WFM)
- Cooperation with RELEX Solutions since the beginning of 2017
- Unified Retail Planning




СКИДКИ
ЭКО УПАКОВКА
18+


Citizens Bank
Pin Pads


NOKIAN PANIMO
WC Duck
Aktiv-Gel Citrus
DUCK
662654
Johnson
A Family Company
12 x 750 ml
Amerplast
OMO
6 x 1L
Red Bull
Surf
6 x 1L

Over capacity = waste of money

Under capacity = poor customer service

Applying the union regulations is not trivial

Violating the rules is illegal

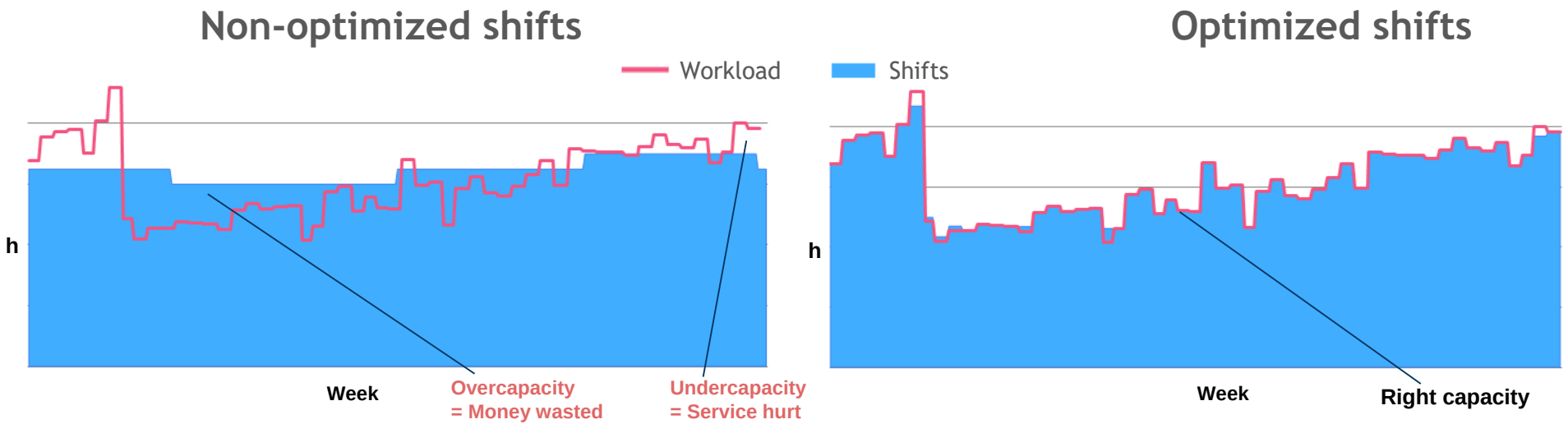
The shifts can be organized in millions of different ways…
… making manual optimization impossible.

The most common way still to generate the shifts is… copying the previous shifts… which are copies of previous shifts…

…oh yes, in excel.

Harnessing modern computing power and algorithms allows for generation of shifts automatically: against forecasted need, optimizing the rosters, and still obeying the regulations, contracts and personal preferences

Superior benefits from workforce optimization



Matching shifts to real need:

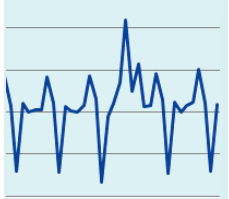
- Ensure sales resources on right time → **Increase sales**
- Reduce overcapacity when need is low → **Save costs**

FInished pilots have shown **10-17%** savings potential just by better planning

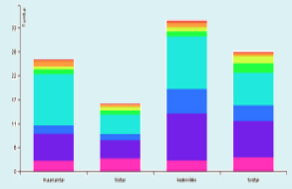
Overview of the Zenopt logic

Shift creation process is automatic once the parameters have been set

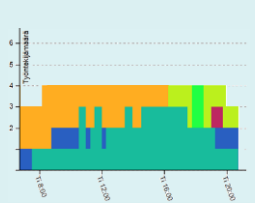
1. Import forecast data



2. Calculate & visualize workload



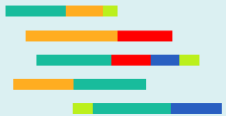
3. Optimize workload timing



4. Take personnel skills into account

5. Optimize for balancing period

6. Optimize day level



7. Shift change management

8. Publish to employees

9. Punch in and out

10. Confirm actuals

11. Payroll material

Depending on the business and position in the supply chain, many forecasts can be used as input

Customer flows
Sales
Delivery projections

Fixed tasks

Inbound palettes

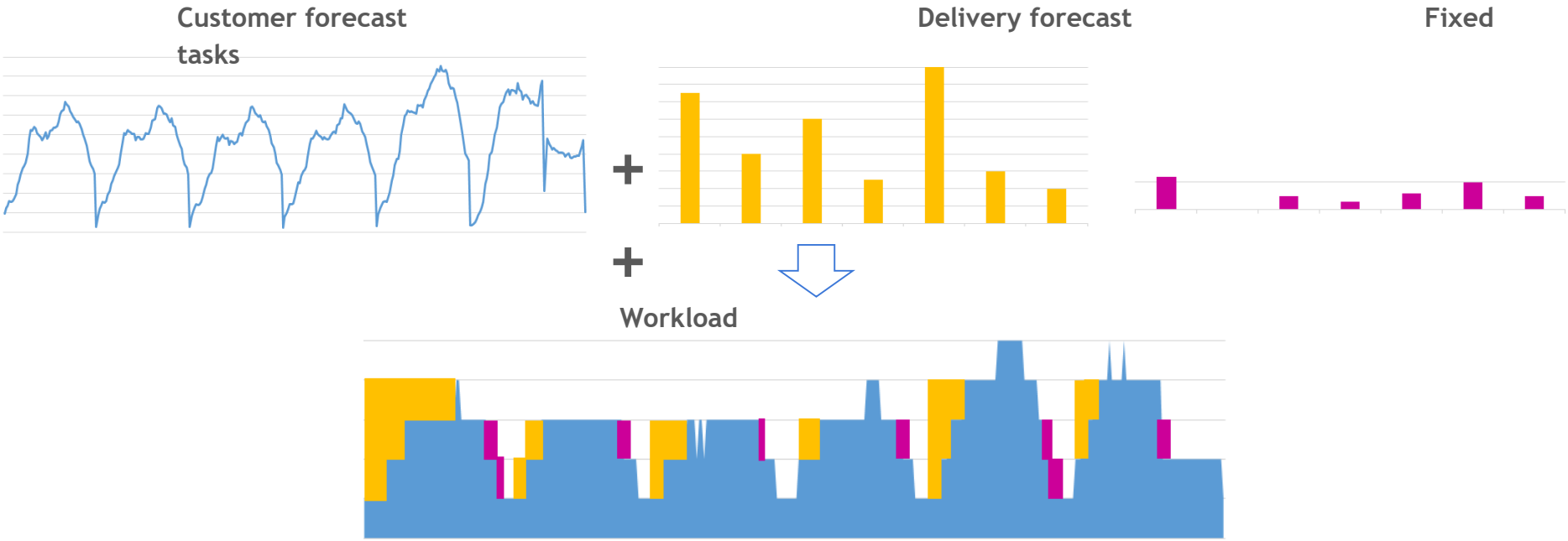
Flexible tasks

Outbound picking rows

Production plans per line

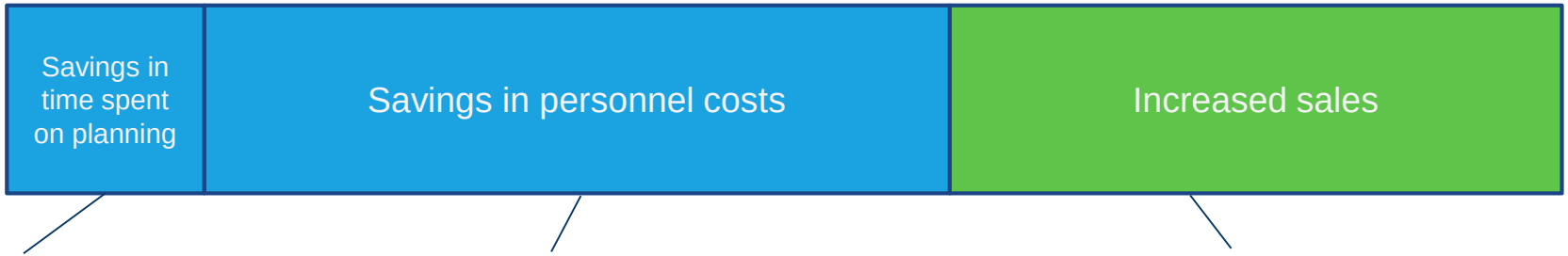
Forecasts and workload - Example

- In retail a common approach is to use the customer and delivery forecasts added with fixed tasks.



Benefits breakdown

Monetary benefits and estimation of their relative proportions



Significantly reducing hours spent on manual planning. Zenopt gives tools to centralize all shift planning. Shifts will be planned automatically base on customer flows, goods flows or budgets.

Even without aiming to decrease personnel costs, optimal shifts are highly likely to reduce overstaffing.

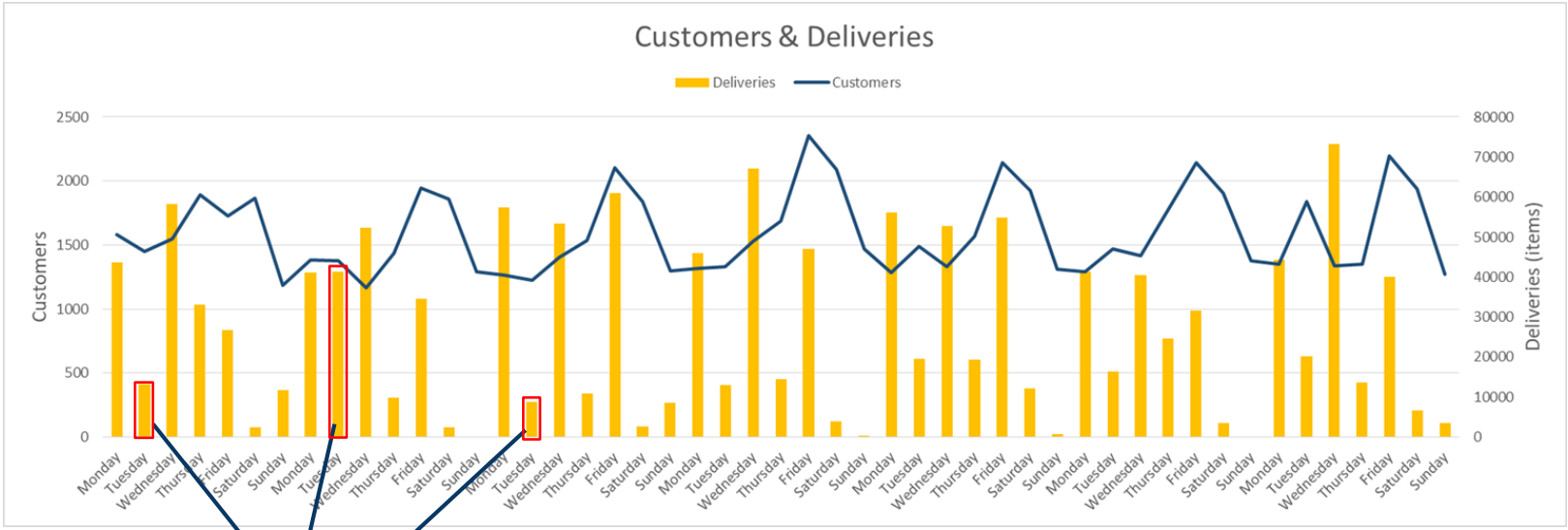
Doing just minor changes to reduce overstaffing at certain time slots can result easily in 1-5% savings. Bigger savings can be achieved after more thorough analysis.

When shifts are allocated per customer flows, potential for sales increase is big.

Case Example

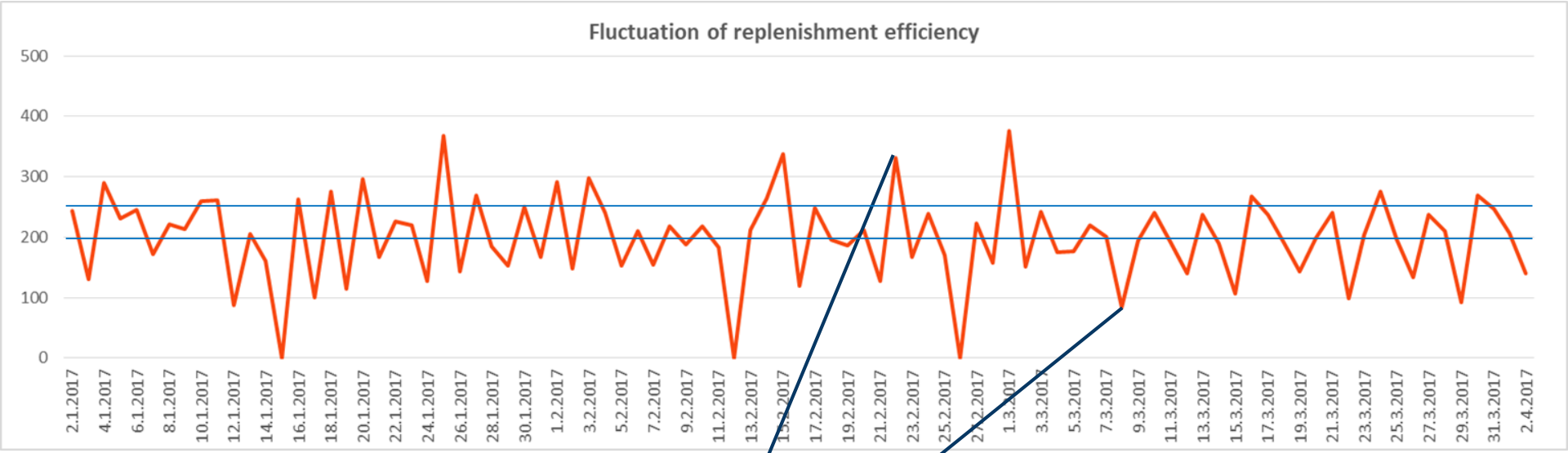
Customer & Goods flows - Store X

- Big differences in daily delivery volumes



Variations in efficiency - Store X

Significant differences in efficiencies between days (items/hour). No big variations in composition of the goods flows



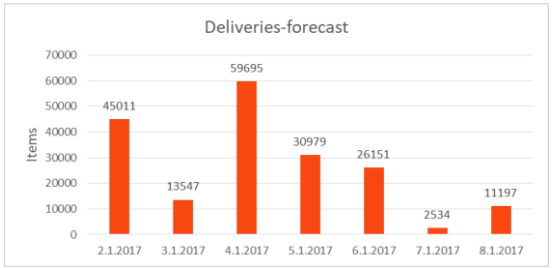
Average efficiency: 201
3rd quartile efficiency: 255

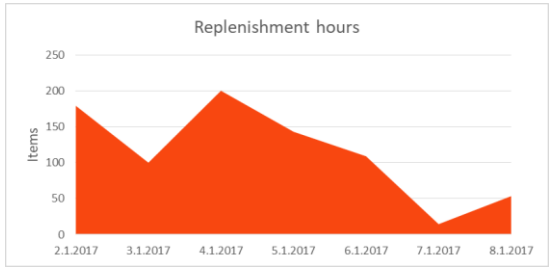
27% diference between average and 3rd quartile.

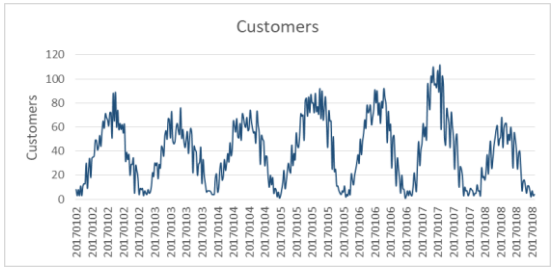
294% difference between extremes.

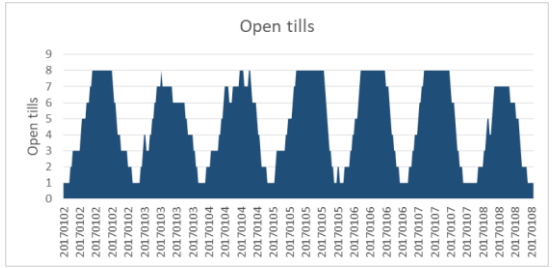
Forecast based workload – Example week

- Fluctuations in delivery volumes strongly effect workload



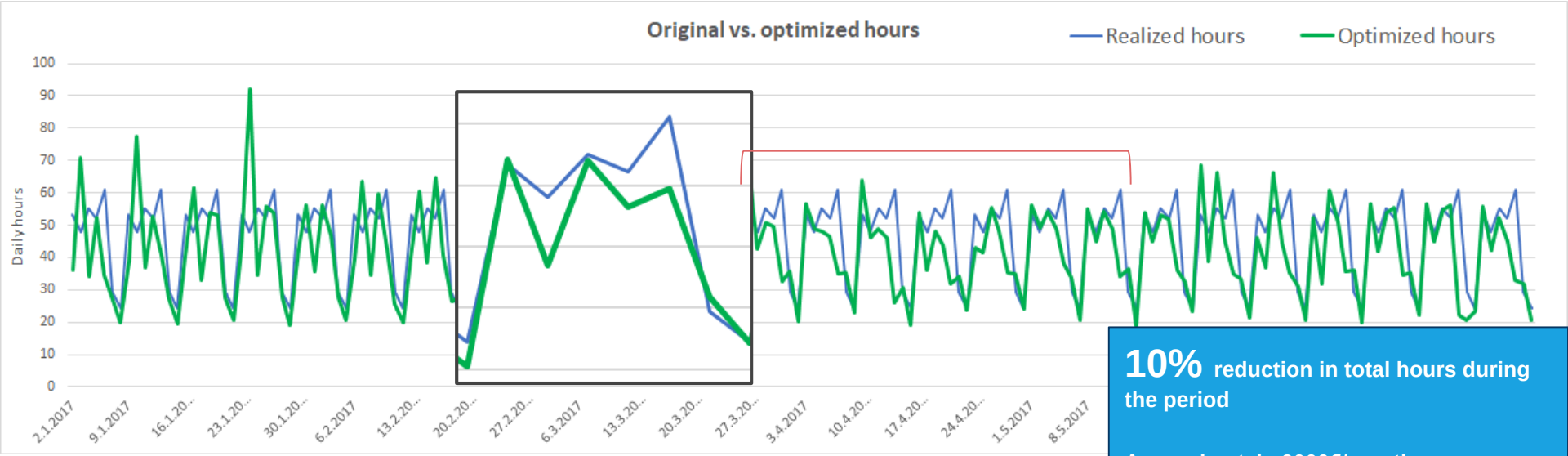






Optimized shifts vs. Realized shifts

- Workload based shifts follow closely the customer and goods flows
  - During most days, optimized hours are below the originals. On certain high volume days they are higher however.



10% reduction in total hours during the period

Approximately 3000€/month.

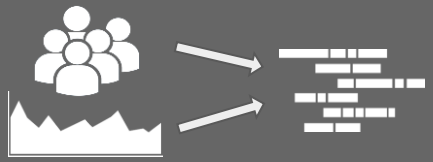
Savings potential from optimization - Summary

- Savings with original contracts and simulation with 25% reduced contracts

Store	Original contracts	25% reduced contracts
Store 1	3%	16%
Store 2	14%	14%
Store 3	15%	15%
Store 4	14%	14%
Store 5	10%	13%
Total savings/ month/ 5 stores	**50 000€**	**80 000€**
Total savings/ year/ 5 stores	**600 000€**	**960 000€**
Total costs savings	**10% savings**	**17% savings**

Some value adding features unique to Zenopt

Automated optimization



Adjusting shifts manually to changing customer flows and budget targets can be time consuming and difficult.

Zenopt automatically adjusts the shifts according to targets, finding optimal pattern for each week, day and moment. Automated planning saves valuable time from planning and focus can be given to other important tasks.

Skill levels

0 1 2 3

Instead of using 0 - 1 skill levels, Zenopt uses 4 skill levels from 0 to 3.

Using skill levels 0 & 1 tends to lead to problems in optimization. If a certain person is substitute for a task, he will never get shifts if skill level is 0. If skill level is 1, he will get roughly as many hours as the main employee.

Using skill levels 0 to 3 will enable to specify who is the main employee for certain tasks and who will replace in case main employee is absent.

Capacity comparisons

Without good visibility to the available capacity and required workload, good quality planning is difficult.

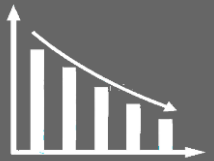
Zenopt brings the key elements easily visible so planner will immediately see how the capacity relates to the workload and if actions are needed. This alone will help reduce unnecessary costs and improve the service levels.

User experience

Optimization can be overwhelming due to vast amount of parameters it requires. Therefore it is crucial to design the UI in a way that is easily understandable.

Zenopt has kept the user experience as top priority in the development and has been able to create an understandable & easy to use workforce optimization software.

Benefits from workforce optimization



Savings in labour costs

Planning shifts optimally to match real need will reduce overcapacity and save costs.

Improved service and processes

Planning shifts based on real workload will ensure right number and type of resources resulting in improved service and processes.

Happy employees

When shifts are adjusted to workload, the workload will be more equal between employees and more stable between days.

Savings in time spent on shift planning

When shift planning is automated, significant amount of managerial work can be reduced.

Thank you!

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