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Introducing data science in big organizations: Increasing sales using geographic position

Adrian Badi

Senior data analyst

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The problem:

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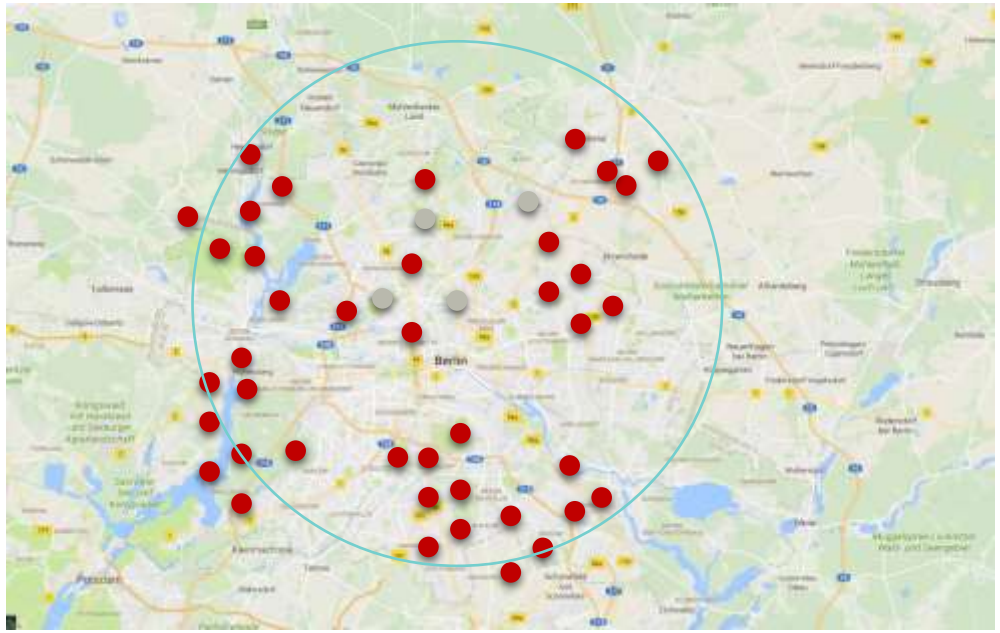
Increasing sales in a “plateau-ed” market


Berlin

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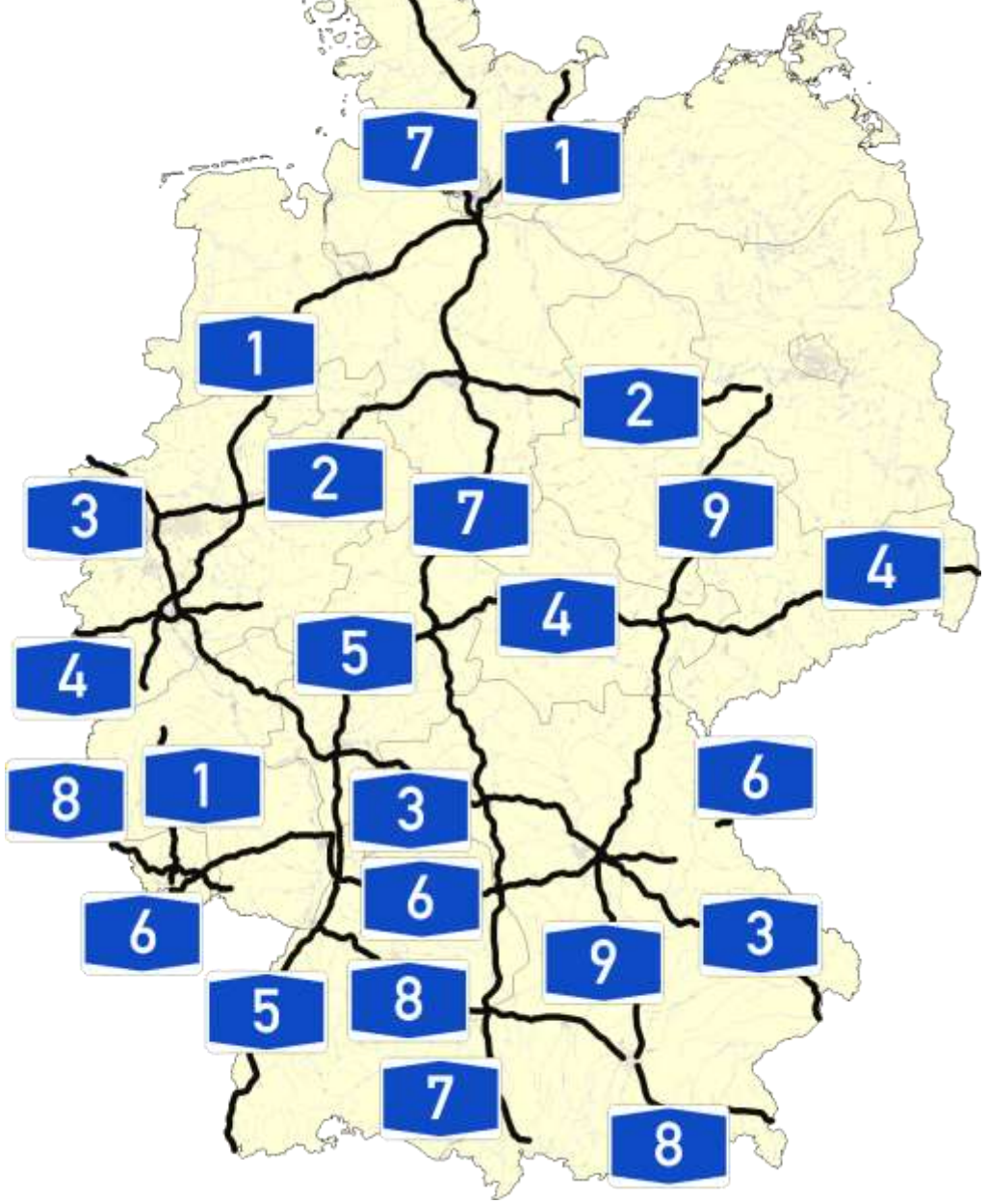

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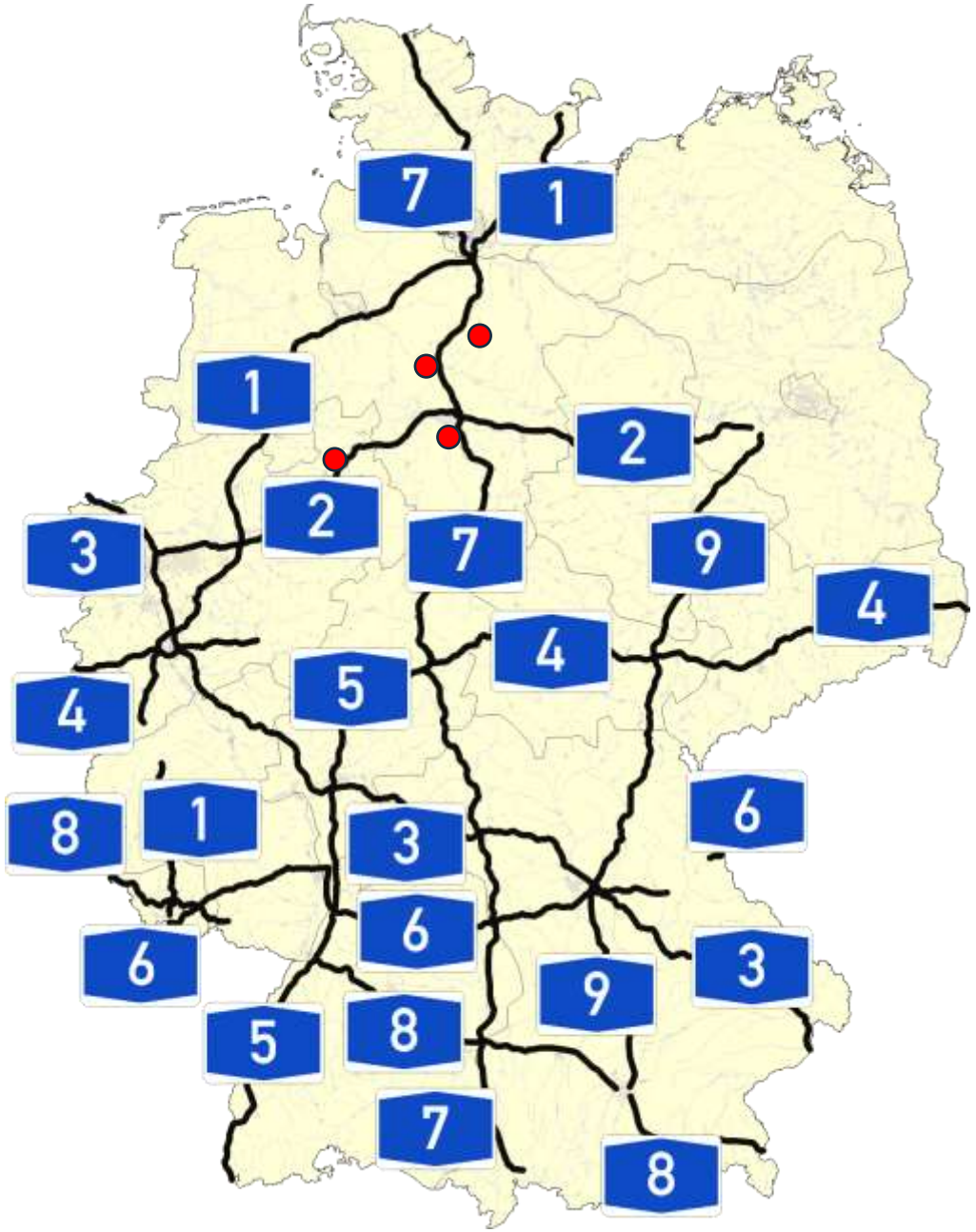

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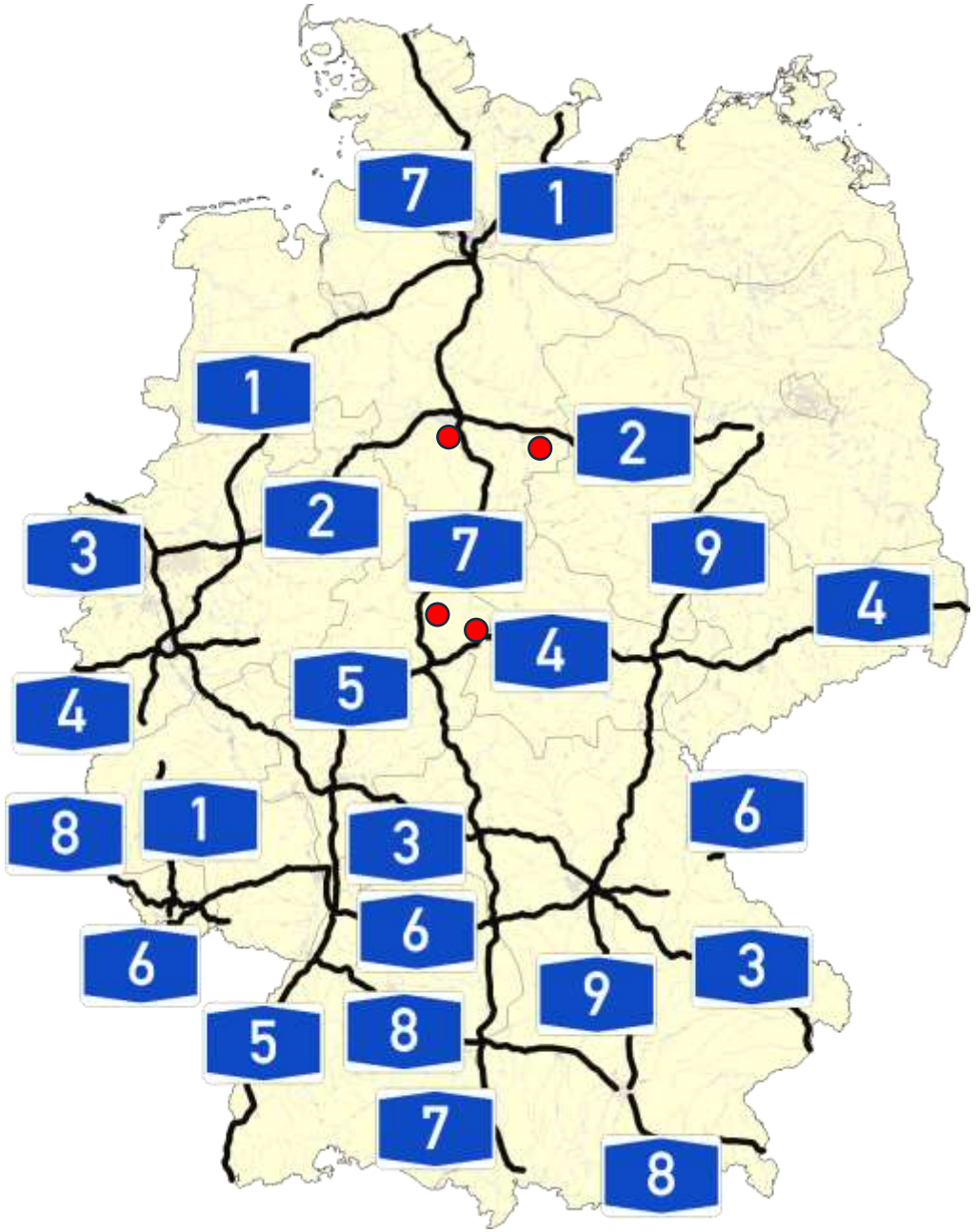

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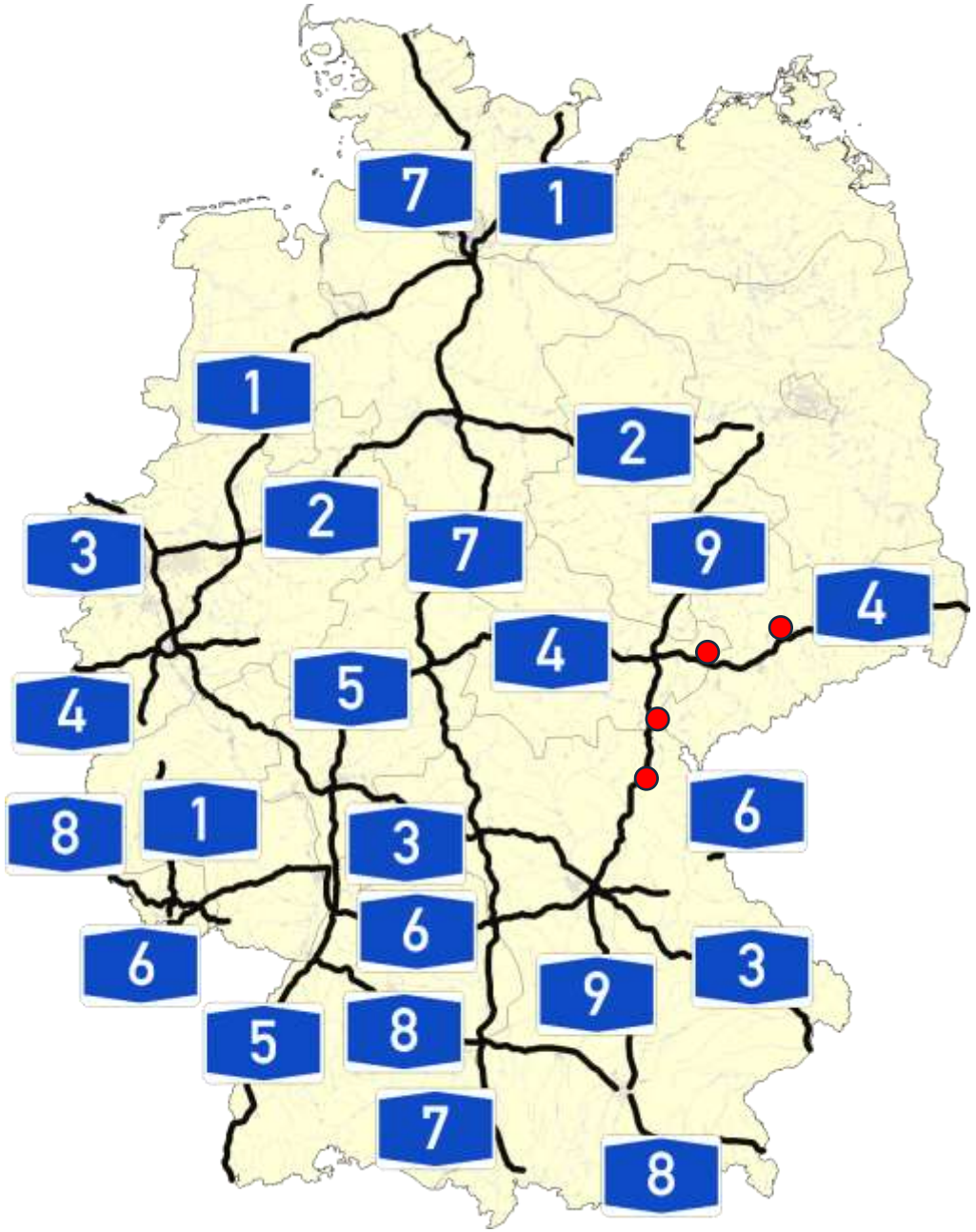

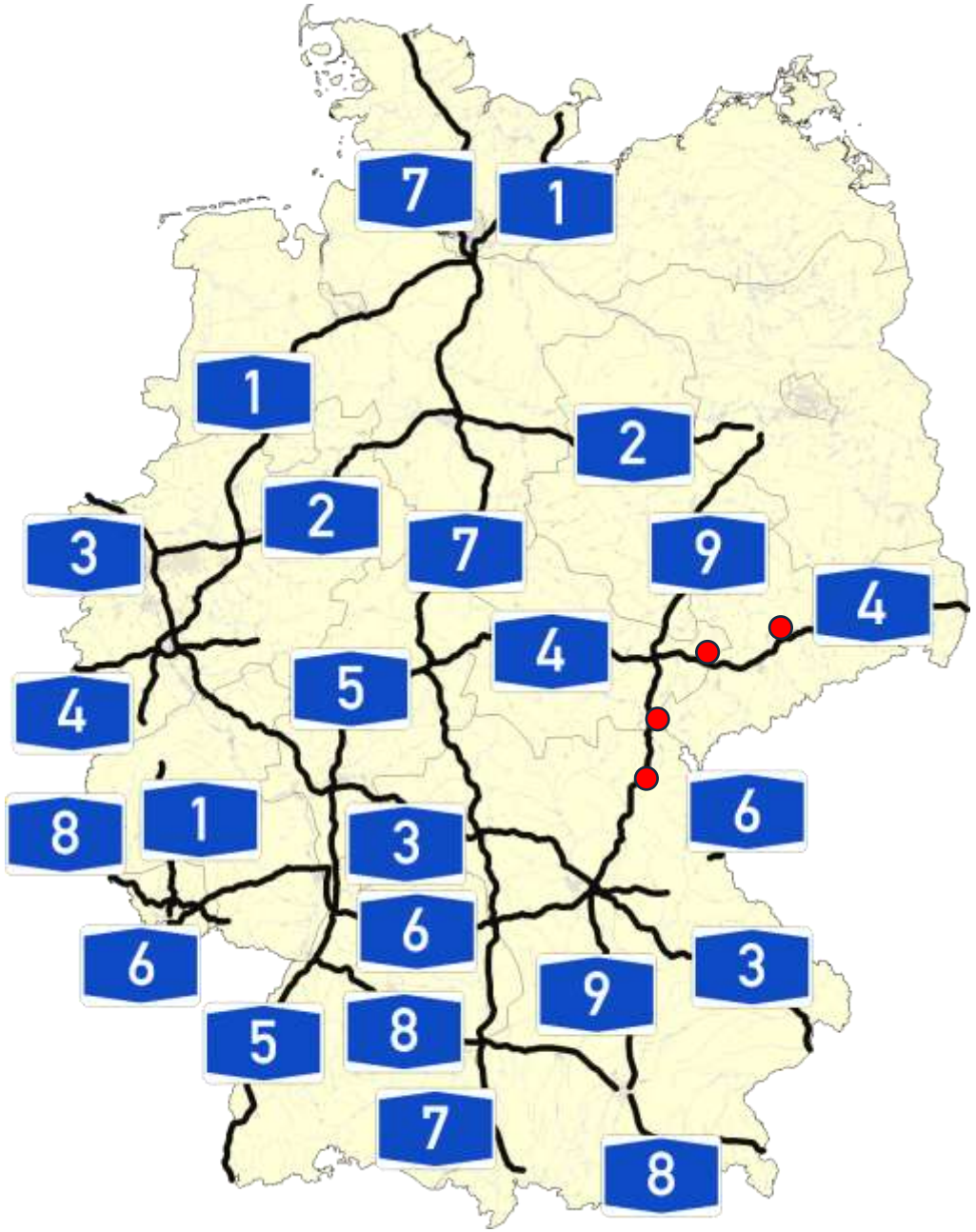

Notice a pattern?

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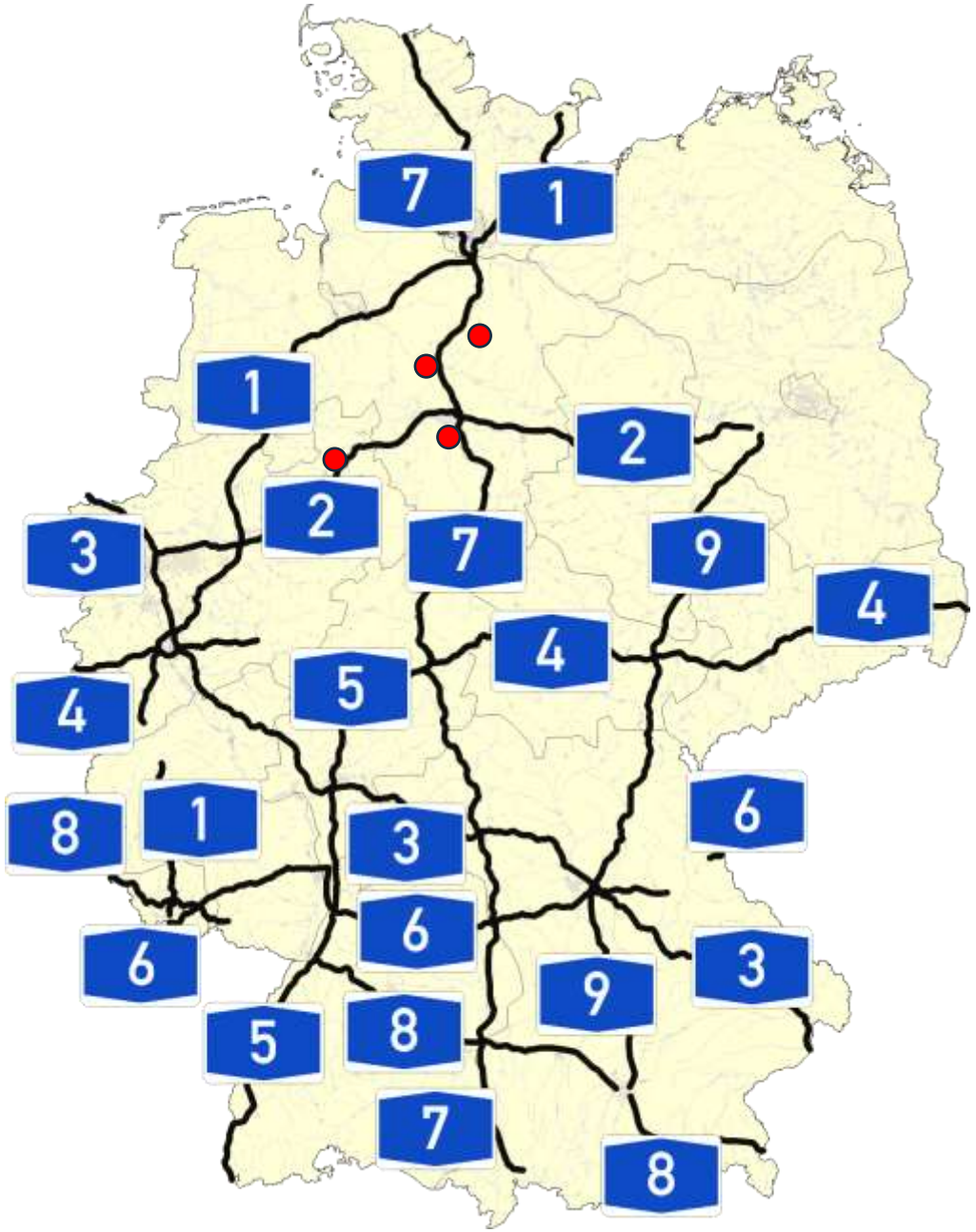

- **Closest to the Autobahn;**
- Closest to a great lunch restaurant;
- Closest to relatives;
- Etc.

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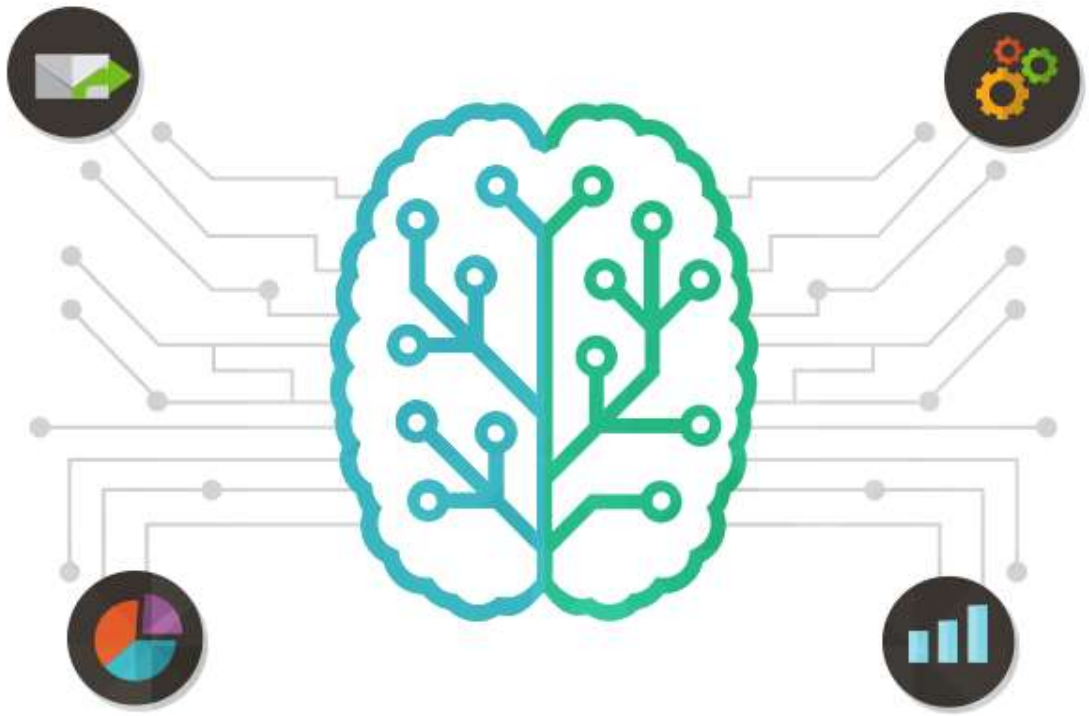
The objective was therefore to

Turn **this**

… into **this**



In other words: make the selection process easier for the salesmen – with data behind it!

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The data: (Transactional, CRM, Appointments)

Years of data:
2

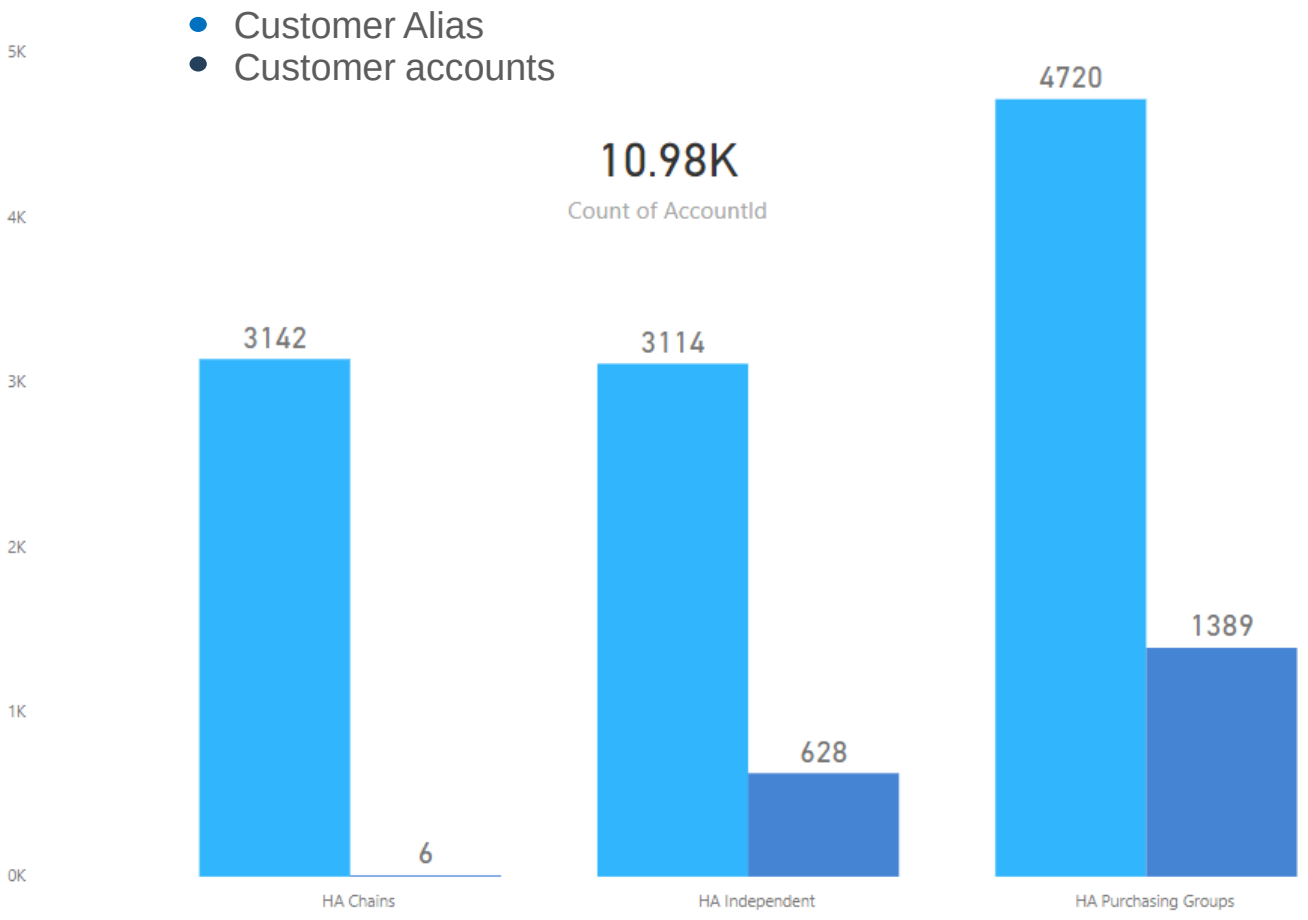
Appointments analysed:
7.2K

Unique Shops:
6280

Orders:
49K

Prototypes tested:
10

Salesmen:
7



Sales channels

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International Sales

Kasper L. Krogager
Business Development Manager

International Sales

Mikkel Jarner Brevadt
Senior Business Analyst

International Sales

Alejandra Garcia Gonzalez, Student Assistant

Sales & Marketing

Kasper Juul Jensen
Senior Manager

Sales & Marketing

Alessandro Pasta
Analyst

Bernafon & Sonic, DE

Danilo Krautz
Controller

BUSINESS CASE TEAM

Information Technology

Julie Ingstrup
Digital Consultant

Information Technology

Troels Christensen
IT Consultant

DIGITAL & IT CONSULTING TEAM

BI

Adrian Badi
Senior Data Analyst, BI

R&D

Anders Vinther Olsen
Audiology and DSP Developer

IT Strategy & Cloud

Bernadeta Jakubczak, Data Scientist

DATA WRANGLING AND MACHINE LEARNING TEAM

Kapacity

Milan Mirkovic
Data Scientist

KAPACITY

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Success criterion:

A visit is successful if there is a sale no more than 5 days after said visit.

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An average salesman had, historically, a 12% success rate,

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Spoiler alert: our model reached 40%

Second time: after feedback from sales people

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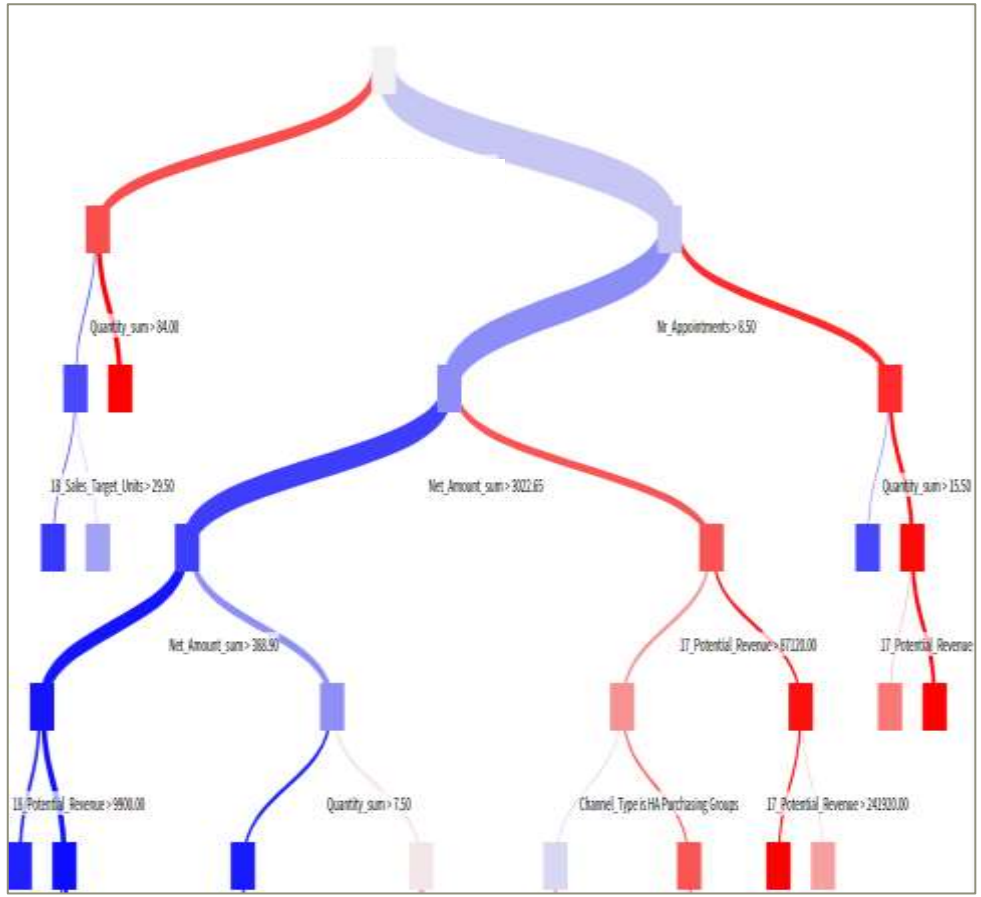
Data sets

- Historical sales visits
- Historical sales
- Customer targets

Data model

- (Potential Units / Revenue)
- Zip code
- Total revenue YTD
- Revenue between visits
- Days since last purchase
- Days since first visit
- Days since last visit
- Is first visit
- Consignment Stock
- Current target ratio
- Sales targets units
- Sales Visits with sales within 5 days*

Decision tree/Random forest



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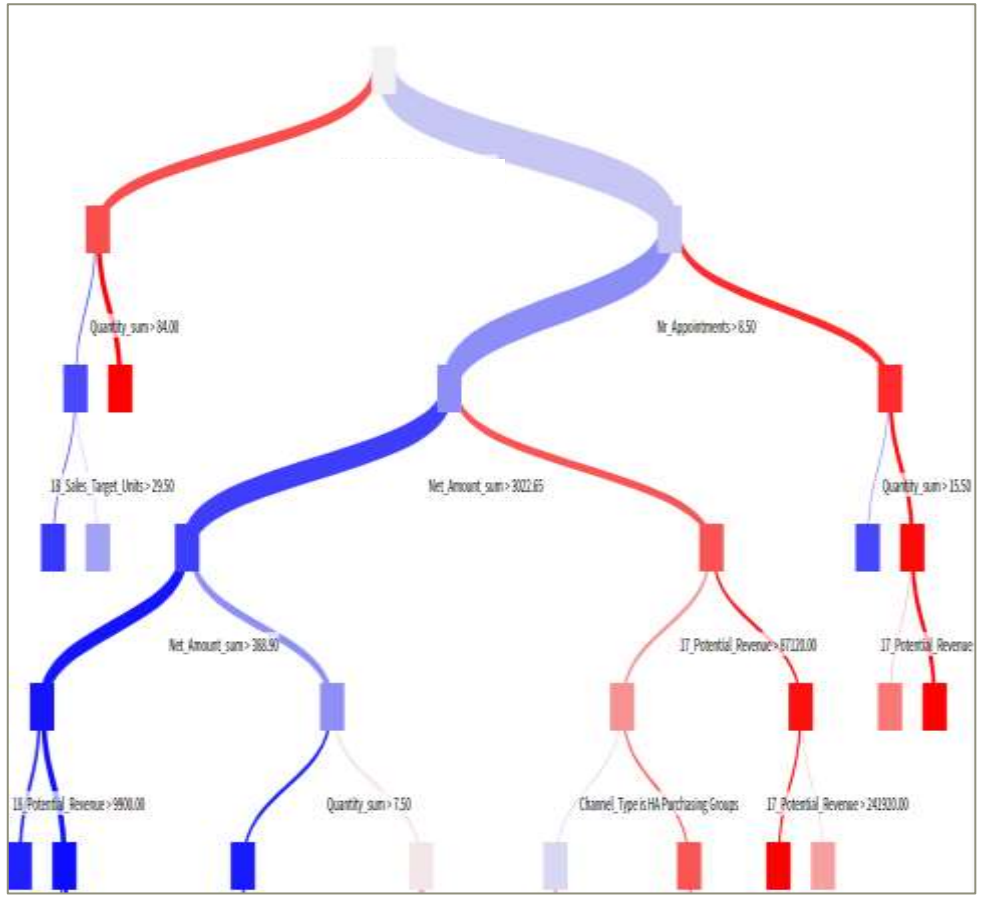

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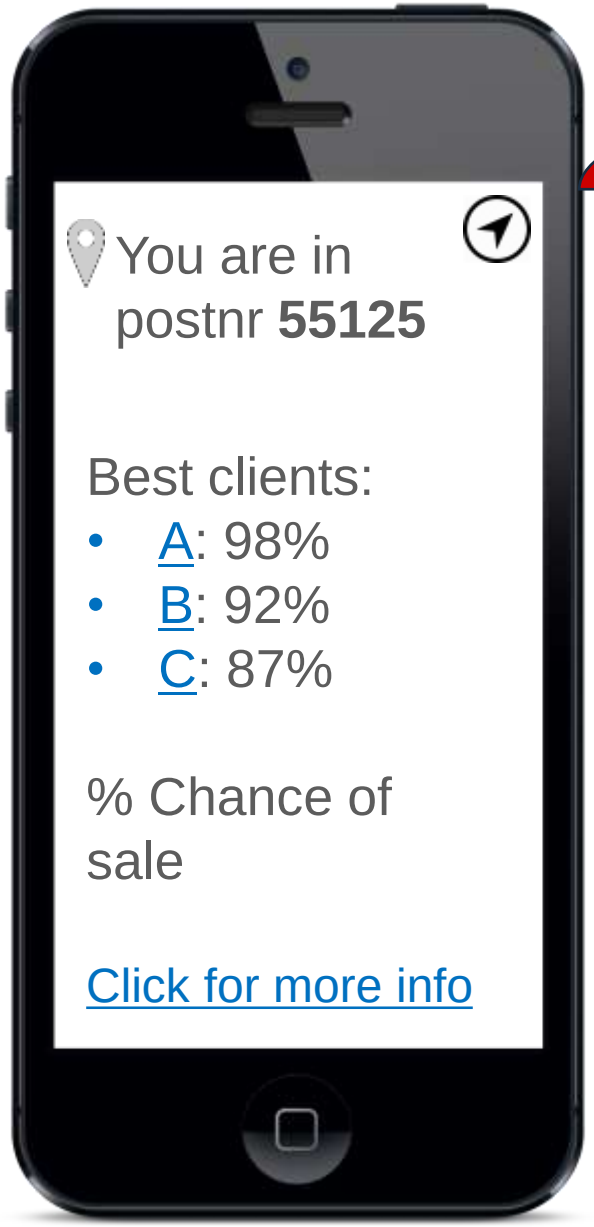
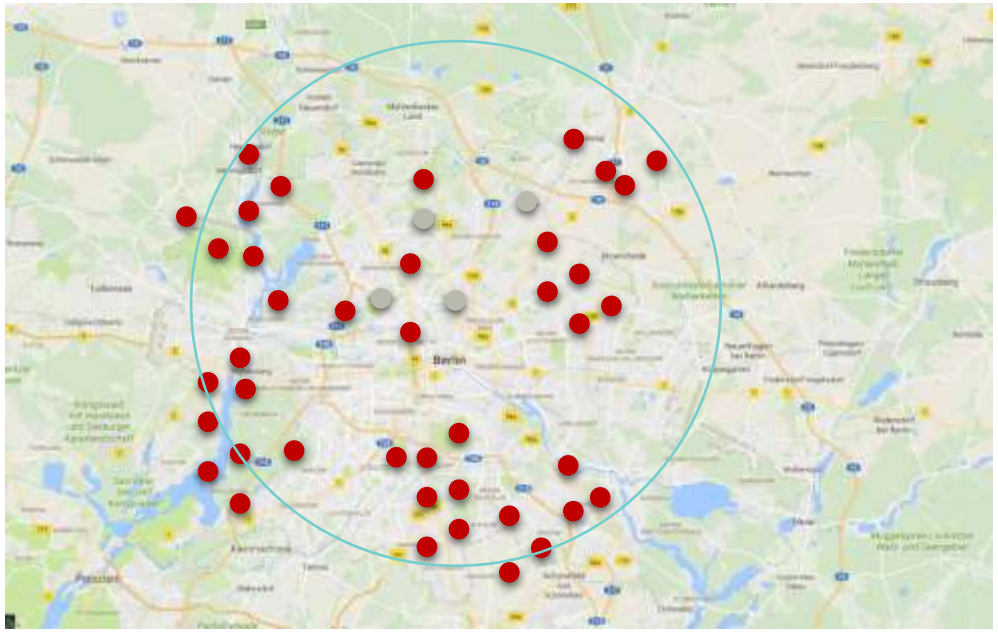
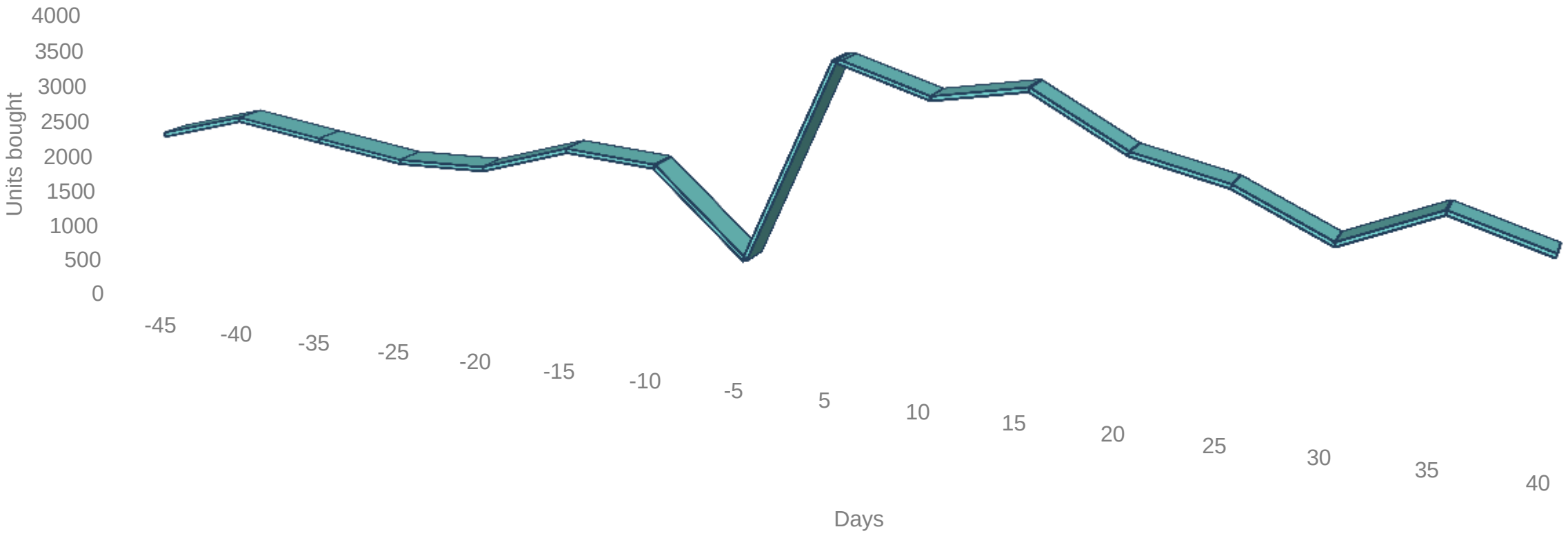

You are in postnr **55125**
Best clients:
A: 98%
B: 92%
C: 87%
% Chance of sale
Click for more info



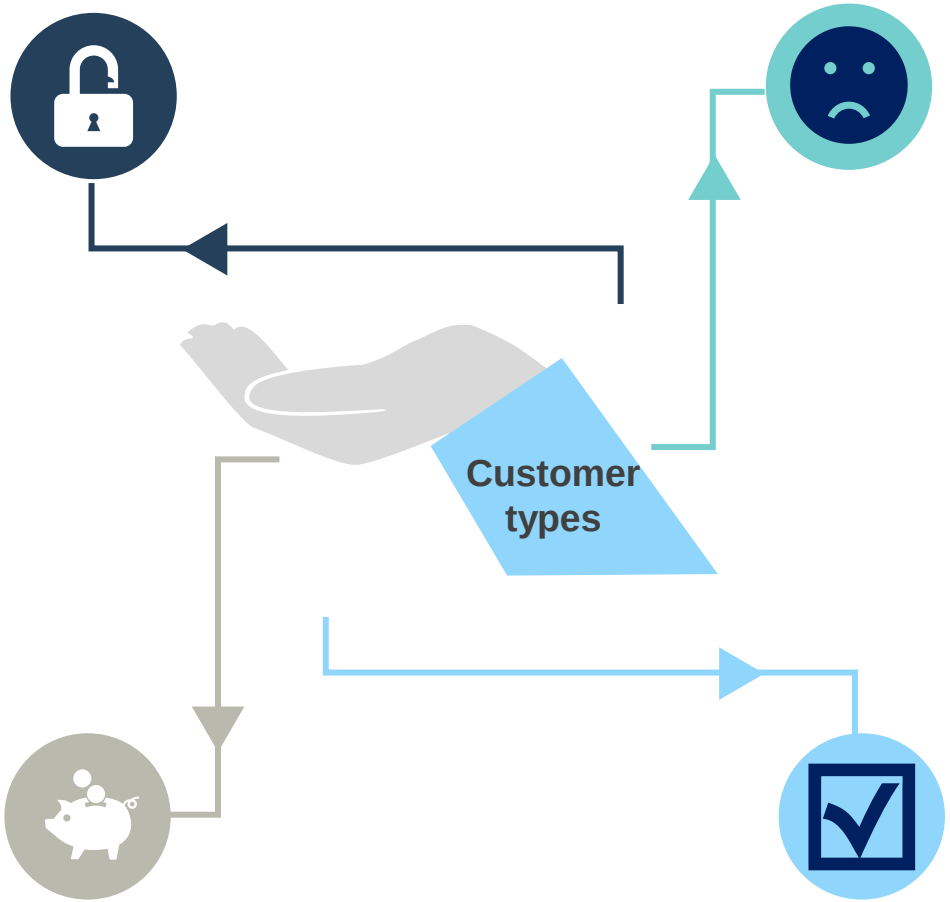
Visit ”pulse” when visiting the right customer



Customer types

Gold Customers 16,7%

These are customers who we visit a lot, but they buy anyway, regardless of how many times we visit them. We should not focus so much on them.



Not enough attention 67,24%

These customers adhere to the Paretto principle. We visit them too little, but they yield much of our return.

Huge customers 0,8 %

These are self-sustaining customers. They buy on their own, a visit will not make that much of an impact.

Okay customers 15,16%

These are the bread and butter customers. They need to be visited, as they buy only when they actually see a salesman (but not always in high quantities)

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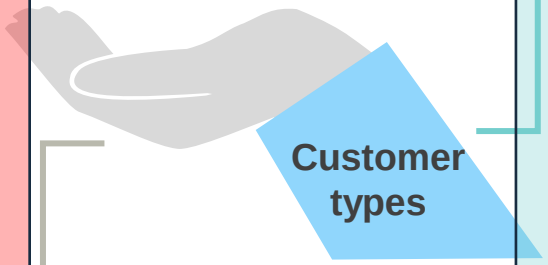

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True Positive	False Negative	Accuracy	Precision
133	688	0.857	0.383
False Positive	**True Negative**	**Recall**	**F1 Score**
214	5277	0.162	0.228
Positive Label	**Negative Label**		
1	0		

Over the course of the experiment (approx. 1 month, 2 salesmen, with the final product), we reached an increase of approx. 60%* on sales. (A/B testing)

The process

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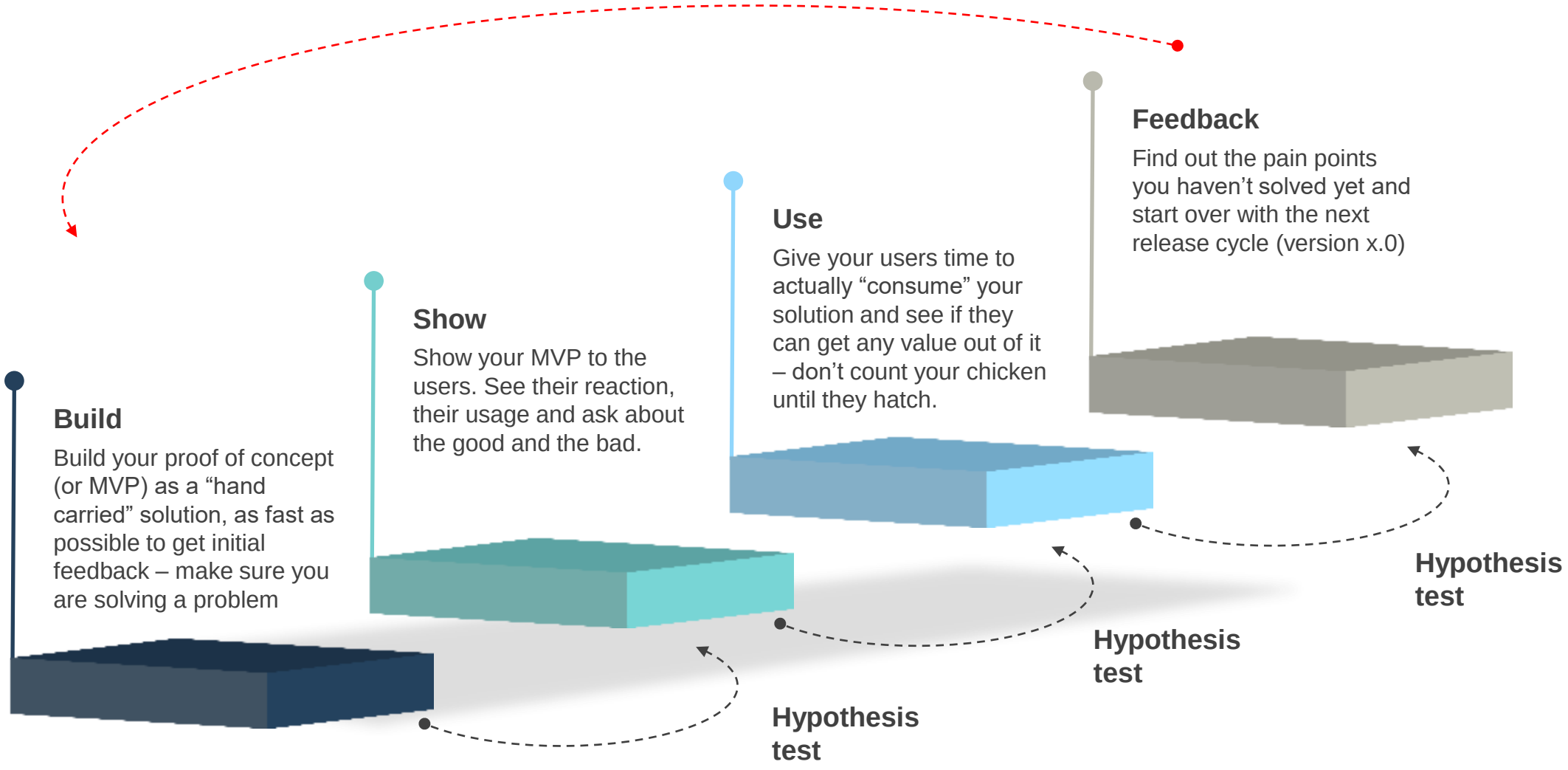

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Thank You