P&G – FRANKFURT BIG DATA LAB
2018 DATA CHALLENGES

“Smart Logistics, Smart Supply Chain”

Norbert Wielens, DACH IT Leader
2018 DATA CHALLENGE – P&G CHALLENGES

Agenda:

• Who are we ? (Kristina)
• Prediction of Future Product Demand (Torben)
• Frankfurt Retail Landscape transformation (Roland)
• Data Analysis at P&G (Roland)
• Q&A
P&G SUPPORT TEAM

<table>
<thead>
<tr>
<th>Dittmar Brinkmann</th>
<th>Kristina Bulle</th>
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<tbody>
<tr>
<td>Jochen Famulla</td>
<td>Torben Schäfer</td>
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<td>Roland Toth</td>
<td>Norbert Wielens</td>
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HOW TO CONTACT US?

Send an email to pg2018challenge.im@pg.com incl.
• P&G Challenge Topic 1 or 2
• Names
• Question(s) / Request(s)
• Proposed date for f2f meeting: Thu 14:00 – 16:00 or Fri 10:00 – 12:00
• Your contact details, e.g. email address(es)
CHALLENGE 1: PREDICTION OF FUTURE PRODUCT DEMAND

Torben Schäfer – Market Intelligence Leader
SELF-LEARNING ALGORITHMS IN FMCG

- Offtake Analysis
- Automatic Ordering Process
- Optimized Inventory Management
- Allocation of products
- Supply Chain Analytics
...
SIMPLIFIED SUPPLY CHAIN TIMINGS

Material Supplier

P&G Plant

P&G DC

Shipment

Retailer Order

Retailer

DC

Shop

- 7 weeks

-2 till -1 week

- 0.5 week

+4 weeks
PROMOTION VOLATILITY
CUSTOMER ORDER PROCESS VS. SUPPLY CHAIN TIMELINE

Sales: initial top line volume planning
- 9 weeks

First volume communication
- 6 weeks

on-going volume adjustment
driven e.g. sales offtake, inventory levels

Customer Order Process
- 0.5 week

Order placement

Feature in store
+4 weeks

Order at Packaging Material Supplier
- 7 weeks

Production at P&G plant
-2 till -1 week

P&G Distribution Centre
Shipment
THE CHALLENGE:
HOW CAN WE LEVERAGE HISTORICAL DATA AND (SELF-IMPROVING) ALGORITHMS TO BETTER PREDICT FUTURE PRODUCT DEMAND?

• What are the relevant variables, e.g. past sales, promotions, seasonality, weather info, fashion trend ... ?

• How to make the algorithm self-learning ?
### AVAILABLE DATA FOR CHALLENGE

Three years of data, with >150,000 data points with the following input:

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ANY QUESTIONS?
CHALLENGE 2: FRANKFURT RETAIL LANDSCAPE TRANSFORMATION
CURRENT FRANKFURT DEMOGRAPHICS

500+ features for Frankfurt neighborhoods (~250 households each):

- population density
- age groups
- purchasing power
- unemployment
- consumers type
- ethnicity
- religion
- buildings
- industry employment
- consumer behavior
- shopping behavior
CURRENT FRANKFURT RETAIL LANDSCAPE

Store locations (all supermarket, drug, discounter etc. chains) + trading areas
THE CHALLENGE: HOW SHOULD THE RETAIL LANDSCAPE TRANSFORM ITSELF TO BETTER SERVE CONSUMER DEMAND IN FRANKFURT?

• Are shopper needs currently being met?
• How should offline and online shopping offerings evolve to meet the ever-changing shopper demands?
DATA & ANALYTICS AT P&G
IT IS A CORE OF P&G BUSINESS
IT Foundational Skills:
IT Project Management, IT Operations & Enterprise Architecture
Data & Analytics

- Market data
- Sales data from stores
- Digital consumer data
- Shopper data
- Supply chain data
Data analyst role

THE CORE OF EACH ANALYSIS IS THE BALANCE OF BUSINESS UNDERSTANDING & TECHNICAL MASTERY

“Great talk, but do we need an IT analyst?”

“Cool analysis but... what does it mean?”

Business understanding

(big) Data Analyst skills
- Activator
- Trusted Advisor
- Business-savvy
- Storyteller
- Coder

Technical mastery
- Data Hacker
- Technical-master
- Researcher
Q&A
THANKS SO MUCH FOR YOUR INTEREST AND ENGAGEMENT!!

HAVE FUN WITH OUR CHALLENGES!!

WE ARE LOOKING FORWARD TO WORKING WITH YOU!!