BOTS & PROCESS IMPROVEMENT AT THE SAME TIME?

OUR AUTOMATION JOURNEY
@ DEUTSCHE TELEKOM SERVICE

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Christoph Anzer

Bonn | 08.10.2020
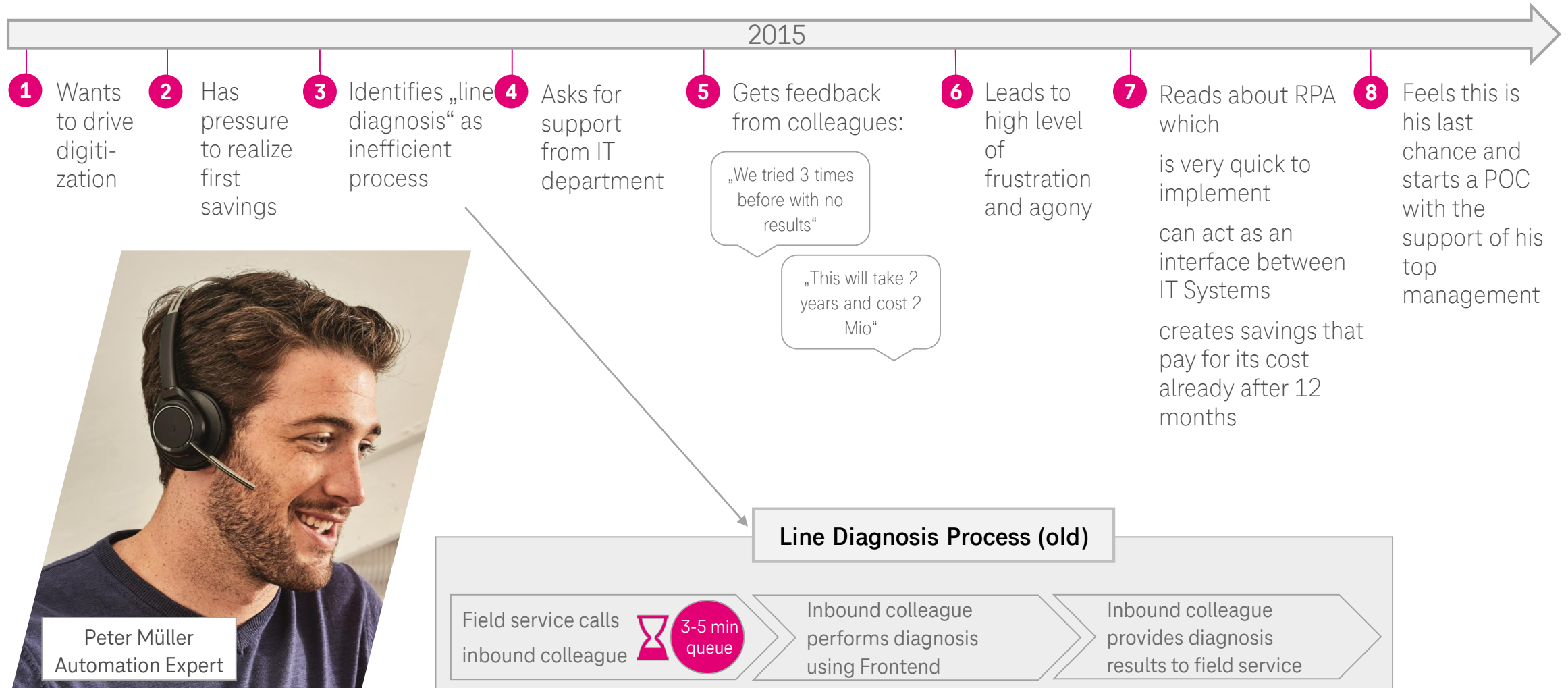
AGENDA

WHY AND HOW WE STARTED WITH BOTS

The Journey of Peter Müller

(Telekom Automation Team)

2015

1 Wants to drive digitization

2 Has pressure to realize first savings

3 Identifies „line diagnosis" as inefficient process

4 Asks for support from IT department

5 Gets feedback from colleagues:

„We tried 3 times before with no results"

„This will take 2 years and cost 2 Mio"

6 Leads to high level of frustration and agony

7 Reads about RPA which

- is very quick to implement
- can act as an interface between IT Systems
- creates savings that pay for its cost already after 12 months

8 Feels this is his last chance and starts a POC with the support of his top management

Peter Müller
Automation Expert

Line Diagnosis Process (old)

Field service calls inbound colleague

3-5 min queue

Inbound colleague performs diagnosis using Frontend

Inbound colleague provides diagnosis results to field service

WHY AND HOW WE STARTED WITH BOTS

Line Diagnosis Process (old)

Field service calls inbound colleague | 3-5 min queue → Inbound colleague performs diagnosis using Frontend → Inbound colleague provides diagnosis results to field service

MessApp Process (new)

Technicians opens „Mess App and types in fixed line number → Submission of diagnosis results via app

App sends request to Bot → Bot operates diagnosis frontend → Bot sends results to diagnosis App
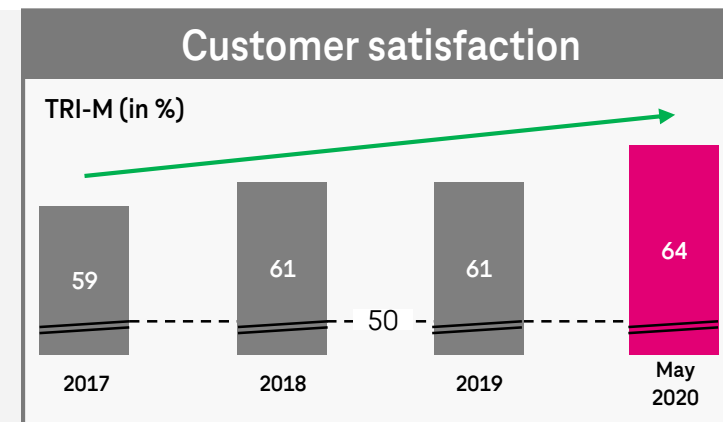
Proven Benefits

- 4 months bot development time
- Agile development team feels high impact!
- Excellent feedback from field service technicians
- Much better customer experience
- Significant lower costs

KEY RESULTS – WHAT WE ACHIEVED WITH IT

Savings

in Mio. €

+15 %

18	45	93	107
2017	2018	2019	2020 (Target)

€ ☺

Customer satisfaction

TRI-M (in %)

59	61	61	64
2017	2018	2019	May 2020

50
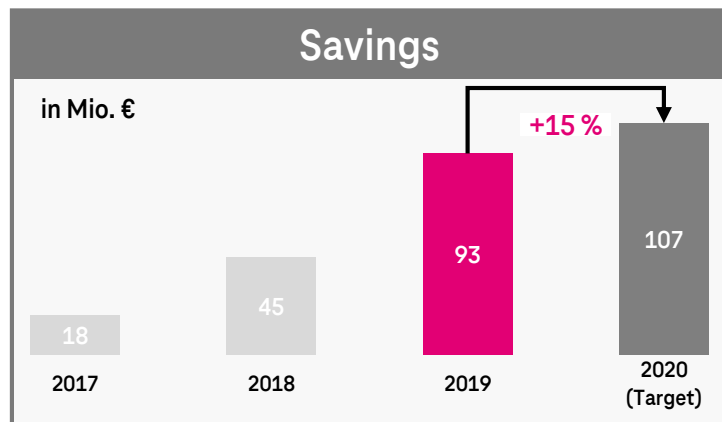
- **RPA** is a big success for DT Service with cumulated **more than 93 Mio. € savings**
- The approach we took also helped to **improve processes** and therefore **customer/ employee satisfaction**
- With more than **3000 bots** we are one of the **biggest RPA users in Europe**

Employee satisfaction

How do you feel at Telekom?

67	75	77	88
2017	2018	2019	2020

👤 😠

Customer complaints

in Mio.

-28 % **-30 %** **-29 %**

2,8	2	1,4	0,99
2017	2018	2019	Target 2020
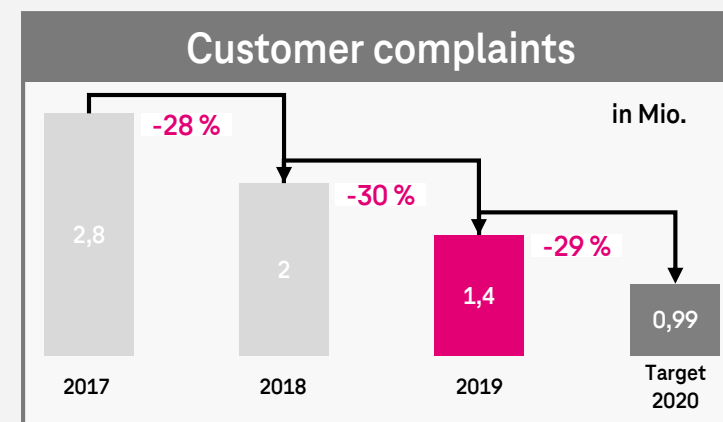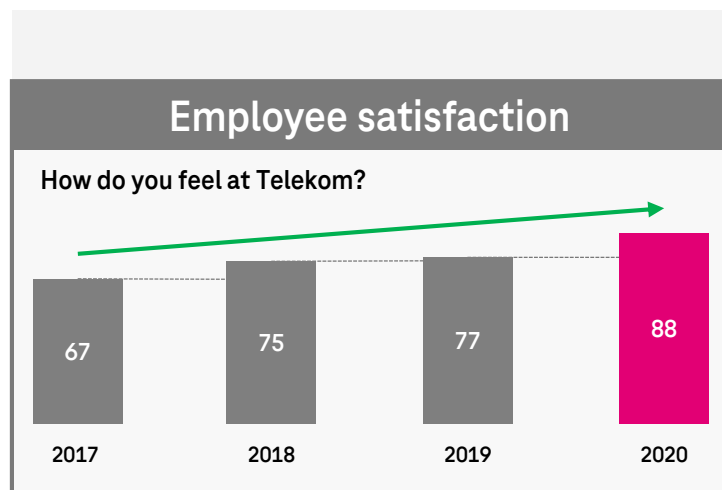
KEY SUCCESS FACTORS OF SCALING UP AUTOMATION SAVINGS
PART 1

1. A very decentral approach
- Initiative was driven by business (Customer Service), first without Core IT involvement
- Even within Service, it was organized and driven within different lines of business & a central department for linkage to an external IT supplier
- Supports competitive motivation

2. Not just look for „Copy Paste" processes but choose an approach based on pain points
- People have problems to articulate the Copy Paste dumb part of their work but not to speak about their biggest pain points.
- If you find solutions to big pains points you get big savings

3. Top management attention (pain & relief)
- Ensure top management attention
- Install a linkage to financial forecasting and provide financial relief with every successful automation idea

with other smart technologies (OCR, KI, Apps)
it yourself to one technology
ined with separate Apps and OCR& AI technology

xternal resources and consider a gain share model
reful, that can get expensive

fear of RPA as good as possible
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KEY SUCCESS FACTORS OF SCALING UP AUTOMATION SAVINGS
PART 2

1. **A very decentral approach**
   - Initiative was driven by business (Customer Service), first wit[...] involvement
   - Even within Service, it was organized and driven within differ[...] business & a central department for linkage to an external IT
   - Supports competitive motivation

2. **Not just look for „Copy Past" processes but choose an approach bas[...]**
   - People have problems to articulate the Copy Paste dumb pa[...] not to speak about their biggest pain points.
   - If you find solutions to big pains points you get big savings

3. **Top management attention (pain & relief)**
   - Ensure top management ....?
   - Install a linkage to financial forecasting and provide financial[...] successful automation idea

4. Combine RPA with other smart technologies (OCR, KI, Apps)
- Don't limit yourself to one technology
- We combined with separate Apps and OCR& AI technology

5. Scale up with external resources and consider a gain share model
- But be careful, that can get expensive

6. Eliminate the fear of RPA as a jobkiller as good as possible
- We involved workers' union from the beginning
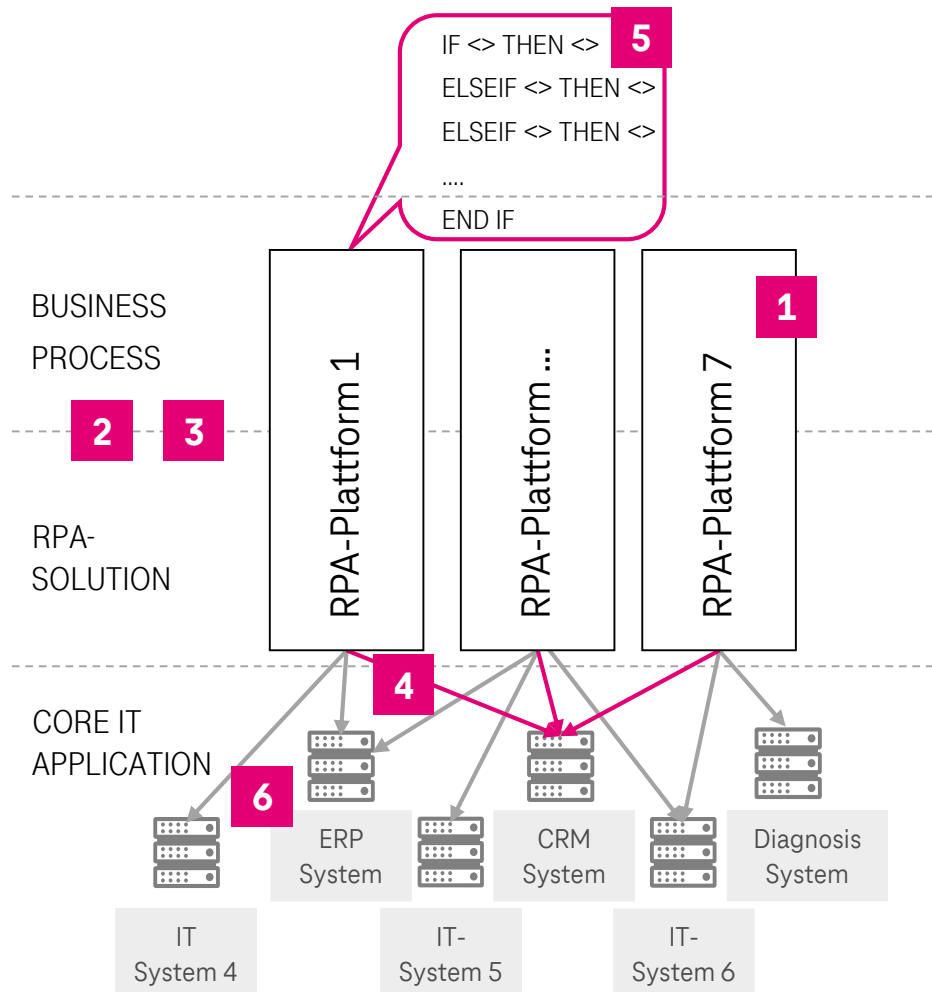- We strictly reduced „External Workforce" costs" instead of internal

7. Create new job opportunities
- We set up new career opportunities & set a motivation to „make a career with RPA"

8. Combine with agile methods & empower your people to be creative
- Fight agony & paralysis with a new spirit of agility & take your destiny into your own hands

... BUT WE ALSO ENDED UP WITH

IF <> THEN <> **5**
ELSEIF <> THEN <>
ELSEIF <> THEN <>
....
END IF

BUSINESS PROCESS

RPA-SOLUTION

CORE IT APPLICATION

RPA-Plattform 1

RPA-Plattform ...

RPA-Plattform 7 **1**

2 **3**

4

6

ERP System
CRM System
Diagnosis System

IT System 4
IT-System 5
IT-System 6

Organizational and Structural Challenges

1 **7 separate RPA-platforms & high maintenance**
Increasing operating expenses & maintenance & each platform used own library

2 **Process knowledge an RPA-code strongly interlocked and hard to untie**
Negative impact on maintenance

3 **No perfect solution to combine or integrate user tasks in an automated process**
Less automation potential

Limitations of RPA

4 **No flexibility in combining different RPA-technologies to automate one process**
The same functionality is in 4-5 RPA libraries with increased maintenance efforts

5 **Over the years we automated more and more complex processes**
Various nested "if than else" statements

6 **Build up technical debt - no migration path to backend automation**

... SO WE ADAPTED OUR STRATEGY...

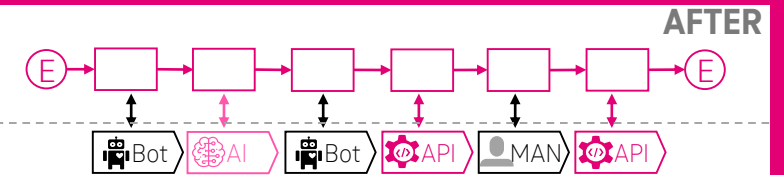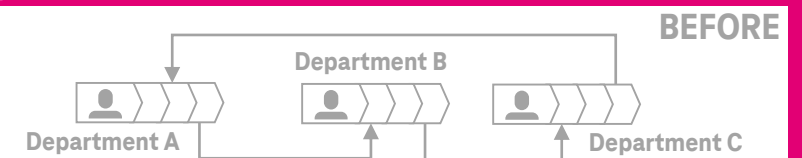| **1**	**New governance & platform consolidation**	More centralized governance with focus on **"best technologic fit solutions"** & platform consolidation to **decrease complexity**
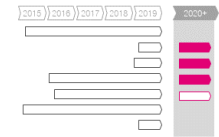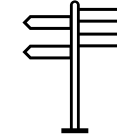
2	**Separation of process layer and bot layer**	Separating the process/orchestration and bot layer to make robotic automation more **versatile**, more **modular** and therewith increase **reusability** of components. This way we installed an "**optimization engine**".

3	**Start a journey from frontend to backend automation**	Replace frontend (i.e. RPA) with backend (i.e. APIs) automation to make solutions more **robust** with **less maintenance**

Ŧ·· AUTOMATION RE-INVENTED with OREO

BEFORE

Department B

Department A   Department C

AFTER

E → □ → □ → □ → □ → □ → □ → E

Bot | AI | Bot | API | MAN | API

1: NEW GOVERNANCE & PLATFORM CONSOLIDATION

New governance
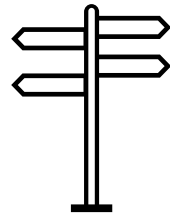
Centralized collective decision making

One central board with all relevant stakeholders (business experts, IT experts and finance) takes implementation decision

Resource pooling and develop and align a new strategy on automation

Central responsibility to develop the new Automation Re-Invented strategy. One pool of project management, development, operations and financial resources are allocated in line with business priorities.

Platform consolidation
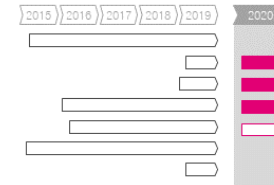
Reduce the number of RPA platforms from 7 to 3 by

- Focusing on the biggest platforms
- Taking platform capabilities into account

Benefits

- Less complexity
- Lower maintenance
- Fewer "knowledge monopolies" through standardization

2: SEPARATION OF PROCESS LAYER & INSTALLATION OF AN "OPTIMIZATION ENGINE" APPROACH

Separation of process layer and bot layer

Manual process

1
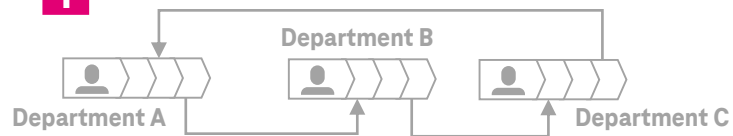
Short time-to-market results in "quick & dirty" process design

→ Complex processes including workarounds
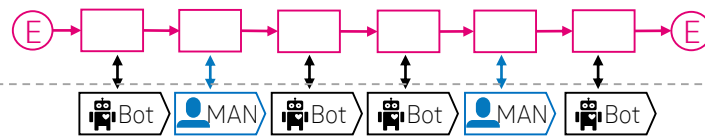
RPA / Frontend Automation

2
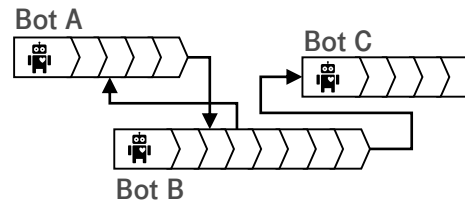
Robotic process automation imitates the human way of working

→ Complex "Spaghetti Bot" automation

Separation of process layer

3

Separation of **Process Layer** (Bot Orchestration) and **Bot Layer**

→ Increased process transparency and optimization

Optimization engine

RPA so far..

- **Automation of a manual process by imitating the human way of working the process**

... and today with OREO (Camunda)

- **Step 1: Optimization of a process during the process modelling phase in Camunda**

- **Step 2: Automation of the optimized process**

Benefits

- **Common basis & language to optimize end-to-end by getting E-2-E transparency, eliminating "silo" check-in / check-out and challenging process simplicity**

- **Reduce complexity before starting programming =Write less code & save valuable programming resources & reduce code maintenance**

- **Easily combine automated an manual tasks**

OREO – „OPTIMIZATION ENGINE" EXAMPLE 1
LEASED LINE TERMINATIONS

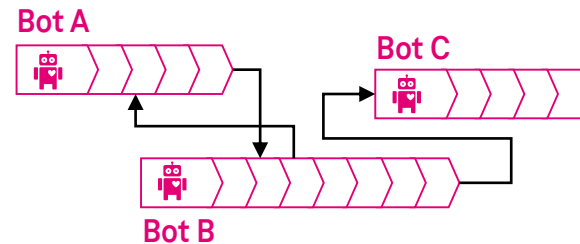### Business Leased Line Terminations
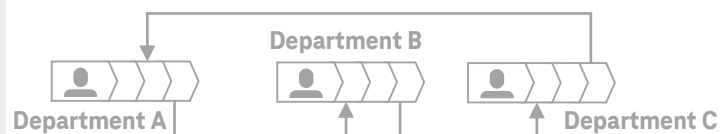
Manual work - More than 50 steps

- Basically the complex process of Leased Line **provisioning „backwards"**
- **5 million minutes** of manual work (50k business fixed lines each 100 min.)
- **Significant backlog** due to low priority of contract cancellation process
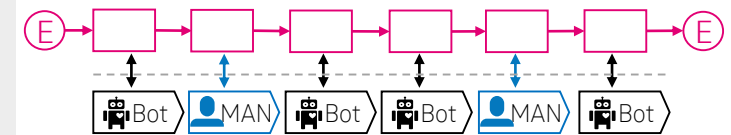
... with RPA

Spaghetti bot - More than 50 automated steps

- **15 months** technical development
- **Complex** spaghetti structure
  - Prone to failures
  - High maintenance
  - < 60% success rate
  - Low user acceptance

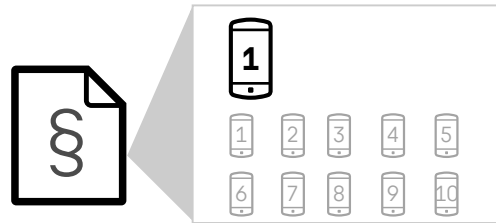### ... with Automation Re-Invented

Bot Orchestration - 20 automated steps

- **5 months** technical development
- **All** 20 micro bots can be **reused** for other business fixed line products
- **Simple** (= linear) bot orchestration structure
  - Less maintenance
  - Faster processing time

OREO – „OPTIMIZATION ENGINE" EXAMPLE 2
SME MOBILE NUMBER TERMINATION
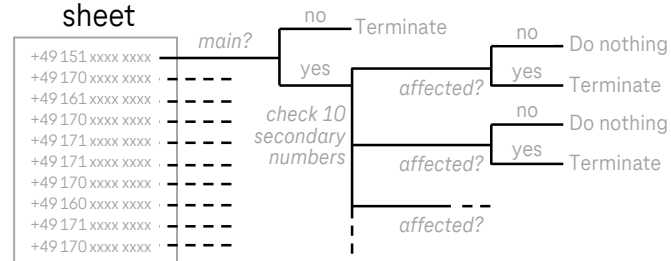
Mobile contracts for SMEs

- **One main** mobile number
- Up to **10 secondary** mobile numbers
- Main number is terminated → a secondary number becomes new main number

For each terminated number the status of max. 10 connected numbers must be checked.

Human or RPA Logic
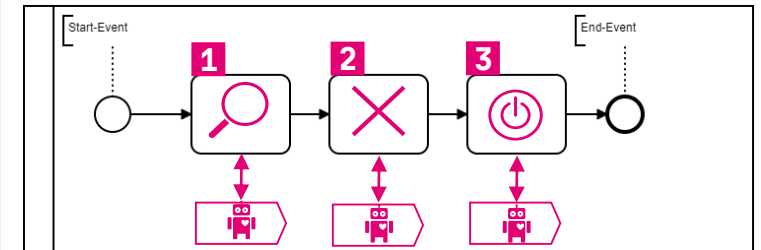
Cancellation sheet

Human / RPA Logic – Sequential processing

We used RPA to fit the old (human) way of working

→ Sequential processing of the decision tree for each number resulting in up to **220 steps** per termination order

With Automation Re-Invented

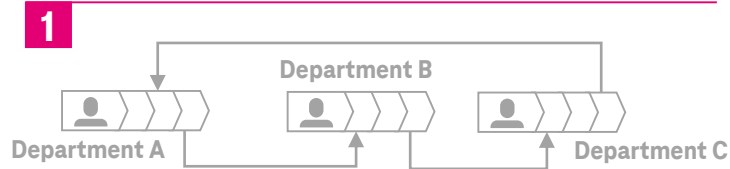#### Process simplification - Batch processing

With OREO automation we change the work "to fit the tool"

→ Simple batch process in **3 steps** per sheet

1. **Identify** all main and secondary numbers
2. **Terminate** all main & secondary numbers
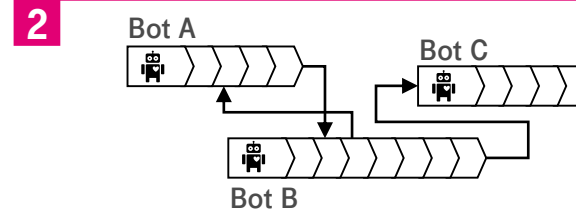3. **Reactivate** non-cancelled numbers

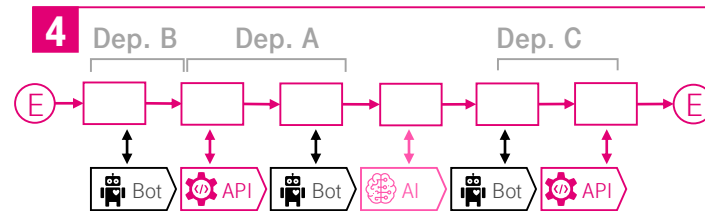# 3: FROM FRONTEND AUTOMATION TO BACKEND AUTOMTATION

Manual process

1

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→ Complex processes including workarounds
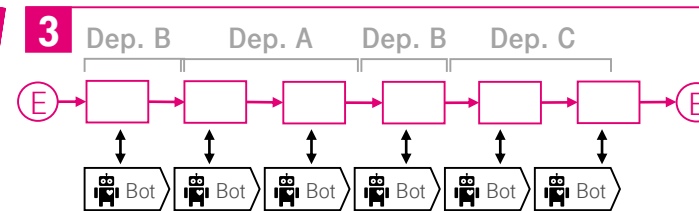
RPA / Frontend Automation

2

Robotic process automation imitates the human way of working

→ Complex "Spaghetti Bot" automation

Backend Automation

4

Shift from Bots **(Front-End)** to APIs **(Back-End)** and other technologies better fit for purpose

→ Enlarged scope for automation + higher efficiency

## Separation process layer

3

Separation of **Process Layer** (Bot Orchestration) and **Bot Layer**

→ Increased process transparency and optimization

WHERE ARE WE TODAY

- Business experts use BPMN to describe the processes
- All used RPA-Plattforms are able to communicate with OREO/Camunda
- Over 15 processes in production
- Orchestration of over 50 Bots
- Implementation of
  - 2 APIs to the CoreSystems instead of building Bots
  - A connection to the Core-Telekom-Mail&SMS Service
  - A Webform-Generator to orchestrate employees

OREO Platform
Orchestrating a range of technologies
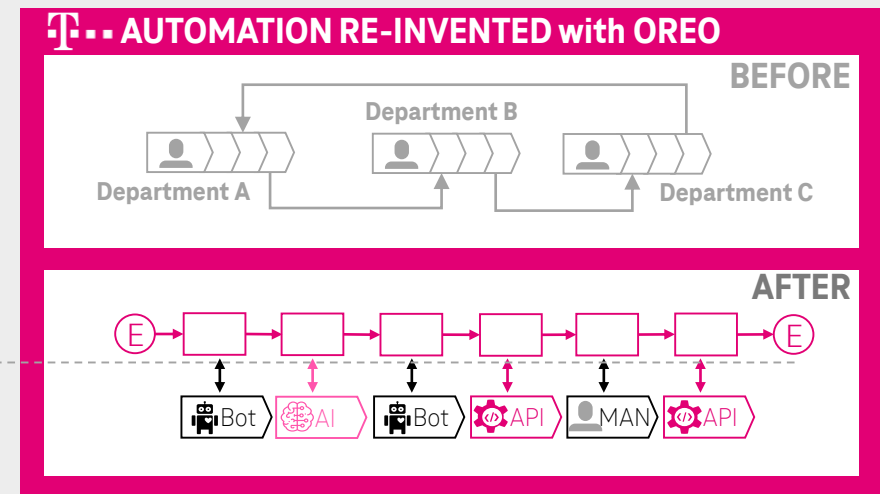
SUMMARY: BENEFITS OF THE NEW STRATEGY

| Painpoint	Solution „Automation Re-Invented" with OREO
Organizational and Structural Challenges	**New Modelling Structure**
1 **7 separate RPA-platforms & high maintenance** Increasing operating expenses & maintenance & each platform used own repositorys	**3 RPA-plattforms & focus on APIs & Increased Re-Use** Reduced maintenance efforts by combining "best of breed" RPA solutions
2 **Process knowledge and RPA-code strongly interlocked and hard to untie** Negative impact on maintenance	**Separation of process knowledge & RPA-solution (process in BPMN)** Business side on process layer, Less development waste
3 **No perfect solution to combine or integrate user tasks in a automated process** Less automation potential	**Manual steps can easily be integrated with a webform-generator** Significantly higher / new automation potential
Limitations of RPA	**Using the advantages of Camunda**
4 **No flexibility in combining different RPA-technologies to automate one process** Need for an Orchestrator increases	**Using Camunda as an orchestrator for the RPA-solutions & APIs** Strongly increase re-use and reduce the number of libraries to maintain
5 **Over the years we get to very complex processes we would like to automate** Nested if than else statements	**Process optimization & simplification** Increased Transparency / E2E view / less silos / less "If then else" code
6 **No migration path to backend automation**	**Clear migration path from frontend automation to backend automation**

CAMUNDA

SUMMARY & KEY TAKEAWAYS (WHAT I WOULD DO IF I WOULD START MY AUTOMATION JOURNEY TODAY)
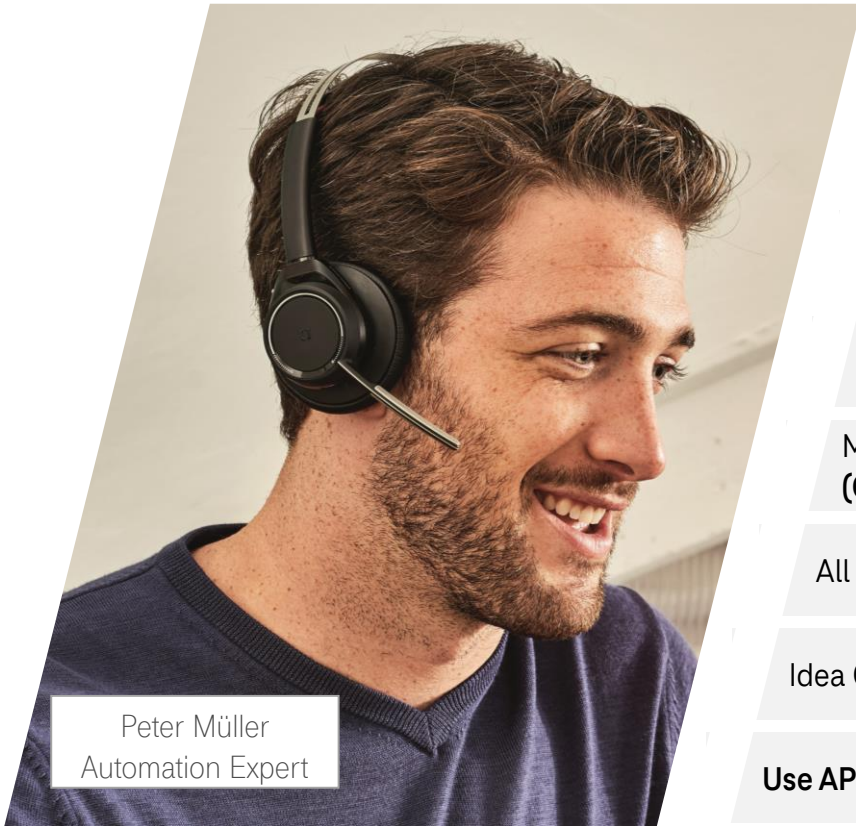
Peter Müller
Automation Expert

Start and scale with **RPA**

Use **momentum** and scale up quickly

Use a **pain point oriented** approach

Separate process layer from Bot (workers) layer and **build modular Micro-Bots**

Minimum for a **central competence center**: Bot Operations, Architecture Office & Bot Orchestration Engine **(Camunda)**

All **other activities** could be **decentralized** (I prefer centralized development)

Idea Generation, Business Modelling & Bot Business Owner should stay within (decentralized) business units

Use APIs wherever possible

CAMUNDA
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Questions?