SAS Forum 2015: Workload forecast at TDC A/S

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Anders Richter, Knowit Decision Danmark A/S
Manager of Sales & Operational Performance Systems at TDC
Per has been with TDC Consumer/Channels since 1997 and during this time worked in many different roles both as department manager and consultant with performance optimization, sales/marketing and product management. He was the leader of the team in TDC Channels that developed current performance systems over the last 2 years incl. the workload forecasting system. Today Per is responsible for TDC Channels S&OP systems e.g. real time sales-, save- and KPI performance systems.

Lead Principal Analyst at Knowit Decision Danmark A/S
10 years of experience with analytics and management consulting projects, for many large and international companies within finance, Telco, Retail & CPG and manufacturing.
With a focus on optimization within supply chains by applying analytics. This could be the use of advance forecasting and inventory models. This has given him alot of knowledge about how advanced analytics is operationlized on several levels but always with a focus on that the results should be seen on the bottomline of the company.

Education: Cand Merc (Mat), HD SCM
TDC profile & strategic focus

**TAK+**
- Focus on customer journeys and differentiated service
- Focus on accelerating existing TAK initiatives and reducing the number of unacceptable customer experiences
- Focus on digitalisation to simplify being a customer online

**CORE+**
- Focus on growth and increased sales on top of existing core business areas and additional sales to our customers, including Blockbuster, Bet25, Security, and new infrastructure

**SMART+**
- Focus on business optimisation: Simplification and better use of platforms, simpler operating model, improving economies of scale and optimising end-to-end processes

**PEOPLE+**
- Focus on empowerment of employees
- Focus on drive, motivation and being pro-active
- Focus on next level teamwork in a functional organisation

**Ambition**
Preferred Scandinavian communications solutions and home entertainment company

**TDC+**
Integrated entertainment and communications solutions to households

**Integrated communications solutions to businesses**
TDC Starting point

Poor customer experience drives need for change

**Strategic programs:**
- TAK (Tag Ansvar for Kunde)
- "I join.."
- "I have a problem .."
- "I move.."

**Project task:**
- Deliver customer experience " on par or better"
TDC Roadmap

Root cause analysis & actions

Problem root causes:
- Customers handled in 5 independent organizations with revenue focus
- Dispersed planning competences and lack of advanced forecasting system
- Stiff & inflexible union agreements
- Poor or none input on sales campaigns & billing activities

Actions:
- Create new functional customer focused organization across brands (TDC Channels)
- Reduce complexity via new agreements, and/or outsourcing of low value activities
- **Build world class workload forecasting system for 2500+ FTE**

TDC Channels
2500 FTEs
Denmark, UK, Germany India

Online
Retail Teleshops 50+
Call Centers 10 mill call p.a.
Order management
Scope
Scope

• Forecast on the number of inbound calls (daily and monthly level)
• Forecast on the Average Handling Time (AHT) (daily and monthly level)
• 2 causal factors (billing and Breakdowns data)
• Standard events
• Export og syncronisation of events
• Collect overrides and keep history.
• Daily opdating of the projects with the new data points.
• Create back-ups of the production projects in the sandbox environment.
• Extraction of the relevant forecast.
• Consolidation of the the monthly and daily forecast.
• Forecast evaluation proces based on the actual call the 2 first hours.
8

Process flow and solution overview

External data

ETL process (1)

ABT daily

Create daily forecast calls (+6 mth.). Updated on every day

Create daily forecast AHT (+6 mth.). Updated on every day

Create Monthly forecast (calls, 24 mth.), updated on every 3 month

Create Monthly forecast (AHT, 24 mth.), updated on every 3 month

Daily distributions of workload (summer/winter)

Forecast evaluation

Extract forecast on CT level in the hierarchy

Extract forecast on the CT level in the hierarchy

AHT reconciliation outside Forecast studio

Reconciliation of day and month forecast

Break down daily forecast to 15 mins intervals

Place the forecast in the specified location in SAS dataset

Store a version of the forecast in SAS data

Create XML files and places in the specified location

Export XML files to Total view

Upload to VA

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Solution overview

Projects and environments
Solution overview

Starting page for the forecasters
Solution overview

Detailed model information for the forecasters.
Solution overview

Forecasters builds their own models
# Project timeline

<table>
<thead>
<tr>
<th>Activity</th>
<th>2014</th>
<th>2015</th>
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<tr>
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<tr>
<td>Project start</td>
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<td>Scope workshop</td>
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<td>Project framework</td>
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<td>Project Sign off</td>
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<td>Hardware ready</td>
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<td>1&lt;sup&gt;st&lt;/sup&gt; workshop</td>
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<td>3&lt;sup&gt;rd&lt;/sup&gt; workshop</td>
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<td>SAS FS Training</td>
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<td>On the job training</td>
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<td>Project delivered</td>
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<td>Project rescoped</td>
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<td>To include all brands</td>
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<td>and additional SAS training</td>
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<td>New forecasting model</td>
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<td>=&gt; External vendor</td>
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<tr>
<td>Handover to TDC</td>
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## Learnings

### Positives

- **Project definition & scope**
  - "One brand" only => "Four brand model"
  - Management tool added to handle for new outsourcing contract
    - 3 mth model M3, M2, M1 with defined forecast accuracy demands

- **TDC Data structuring skills**
  - We succeeded in building working tables very fast - which lead to extended scope

### Lessons learned

- **Hardware**
  - Getting servers and user profiles right with TCS took a while..

- **TDC change management**
  - Ability to onboard key personnel and get them to "buy in" difficult due to massive changes across TDC Channels
  - Hard to handle project cross locations due to different tasks and knowledge differentials.

- **Time to impact**
  - PL accident meant delays in special models being build for e.g. Billing & Sales applications
  - Today the SAS model is yet not used in all service areas.
Customer experience today...

75% of all calls answered within 20 sec in Q2 2015

Drivers:
- Separation of “High” & “Low value” calls with TDC to focus on “High value” calls
- Sourcing of “low value” calls to TDC external vendor.
- Improved forecasting process in place to match capacity to customer demand
  - 3 months Inflight model with accuracy demands.
Customer experience 2015

The journey so far compared to starting point

Expected results still to come:

- 100+ day In-flight model with accuracy levels that will realize capacity fit to customer demand
- Savings from better capacity planning
- Increased forecasting accuracy (MTH MAPE)
  - with “quality input” in billing and campaign areas
    - Billing from 15% to 6%
    - Sales from 10% to 6%
    - Support from 8% to 4%
Spørgsmål!
Spørgsmål

- Hvornår er model fuldt implementeret?
- Hvorfor ikke anvende en allerede en eksisterende TDC løsning?
- Forskel i arbejdsmetode for brugeren / Forecaster?
- Ratio forecasting
- Outsourcing – hvad skete dér?
- Hvad sparer i?