SAP APO DP:
Tools and processes that hold it together at Sanofi
What we will cover

- Forecasting Challenge
- Support Process
- Core Process
Forecasting Challenge
Our history and context
We are a global integrated healthcare company engaged in the research, development, manufacturing and marketing of healthcare products.

(1) As of December 31, 2012
History of Sanofi

1718 - Midy
1901 - Sterlin
1910 - Rorer
1911 - Roussel
1920 - Hoechst
1950 - Marion
1970 - Synthelabo
1973 - Sanofi
1973 - Sanofi-Synthelabo
1979 - Delalande
1987 - Institut Pasteur
1990 - Rhone-Poulenc Rorer
1991 - Chinoin
1997 - Connaught
1999 - Hoechst Marion Roussel
1999 - Aventis
2004 - Sanofi-aventis
2008-2010 - BMP Sunstone, Medley, Merial, Nepentes, Zentiva, Kendricks, Oenobiol, Chattem, Acambis, Symbion, Shantha Biotechnics
2011 - Genzyme
2019 - CHALLENGE
Our strategy

1. INCREASE INNOVATION IN R&D
2. SEIZE EXTERNAL GROWTH OPPORTUNITIES
3. ADAPT THE GROUP TO FUTURE CHALLENGES

**Priorities**
- Diabetes
- Fibrosis and tissue repair
- Immuno-inflammation
- Infectious diseases
- Rare diseases
- Oncology
- Ophthalmology
- Aging

**2012 - 2015**
- 19 potential new launches*

**2009-2011**
- 23 companies acquired including Genzyme
- 61 in-licensing agreements
- 2 joint ventures
- €23bn invested in external growth

**R&D Portfolio 2011 Annual Results**
- 60 molecules and vaccines

**Growth Platforms**
- Emerging Markets
- Diabetes Solutions
- Human Vaccines
- Consumer Healthcare
- Animal Health
- Innovative Products
- Rare Diseases
Sanofi Group in the UK & Ireland

- **Sanofi**
  - Headquarters: Guildford
  - 2. Dublin
  - Manufacturing: Dagenham
  - 4. Fawdon
  - 5. Holmes Chapel
  - Distribution: Chapeltown

- **Zentiva**
  - Headquarters: Guildford
  - R & D
  - 11. Harlow
  - 12. Pirbright

- **Merial**
  - Head Office
  - 11. Harlow

- **Genzyme**
  - Headquarters: Guildford
  - 7. Oxford
  - Research: Cambridge
  - Manufacturing: Haverhill
  - 10. Waterford

- **Sanofi Pasteur MSD**
  - Headquarters: Maidenhead

**Strong UK & Ireland presence**
- Circa 3,000 employees
- 14 Locations

Sanofi and Zentiva combined 4th largest supplier to the NHS in terms of volume of prescription medicines.
Forecasting scope

Factories
Sanofi UK
Wholesalers
Pharmacies

CHALLENGE
Business Segmentation

Core

Mature

Branded

Generic

Consumer

CHALLENGE
Forecasting objectives

We set ourselves ambitious targets

- Aim to Increase forecasting accuracy
- Accuracy and Dispersion measured on lag 3
- Measure individual forecasting performance of each supply planner

<table>
<thead>
<tr>
<th>Partial extract from KPIs measured by planner and by business segment</th>
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</thead>
<tbody>
<tr>
<td>Forecast Dispersion (%)</td>
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<tr>
<td>Forecast Accuracy (%)</td>
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<tr>
<td>OOS Rate (%)</td>
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<td>CSR Rate - Turnover Rupture (%)</td>
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<tr>
<td>CSR Rate - Turnover Rupture + Back Order (%)</td>
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<tr>
<td>Unit Coverage (Mths)</td>
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</tbody>
</table>

| Forecast Dispersion (%) | 8.1% | 24.2% | 19.3% | 14.2% |
| Forecast Accuracy (%)   | 101.3% | 93.9% | 83.4% | 95.5% |
| OOS Rate (%)            |       |       |       |       |
| CSR Rate - Turnover Rupture (%) |       |       |       |       |
| CSR Rate - Turnover Rupture + Back Order (%) |       |       |       |       |
| Unit Coverage (Mths)    |       |       |       |       |

| Forecast Dispersion (%) | 7.4% | 42.1% | 12.8% |
| Forecast Accuracy (%)   | 98.1% | 130.7% | 103.2% |
| OOS Rate (%)            |       |       |       |
| CSR Rate - Turnover Rupture (%) |       |       |       |
| CSR Rate - Turnover Rupture + Back Order (%) |       |       |       |
| Unit Coverage (Mths)    |       |       |       |
Support Process
At the heart of good forecasting
Intelligent Forecaster is a powerful tool for:

- portfolio segmentation
- auto model selection

Absolute relative adjustments are distributed as follows:

1\textsuperscript{st} Quartile 0.1\% to 5.1\%
2\textsuperscript{nd} Quartile 5.2\% to 13.4\%
3\textsuperscript{rd} Quartile 13.5\% to 30.3\%
4\textsuperscript{th} Quartile 30.4\% onwards
Forecasting Models Review

Model Optimisation

SAP APO Model Updates
ABC Analysis

20% of SKUs
75% of volume

“Important” A ------------------------ B ------------------------ C “Unimportant”
20% of SKUs $\rightarrow$ 40% of forecasting error

“Easy” \[ X \] --------------------- \[ Y \] ---------------------- \[ Z \] “Difficult”
Product Portfolio Segmentation

Automate easier and lower value forecasts; Check if they make sense

relatively easy to forecast

relatively difficult to forecast

relatively high value

relatively low value
The SKUs can be easily classified in the nine categories A-C/Z-X

- 74% of all SKUs on statistical automation
- 8% on watchful attention
- 17% on constant monitoring (stats+judg)

Small volume
Large volume
Small forecasting error
Large forecasting error

17% on constant monitoring (stats+judg)
8% on watchful attention
74% of all SKUs on statistical automation
How many Stats models are there in APO?

~10 X 100 X 100 X 100 = ~ 10’000’000

How many do we actually use?

10
Model Selection using Intelligent forecaster
Visual data analysis
Forecasting Models Review

Model Optimisation

SAP APO Model Updates
Using APO in practice
MONTHLY

New APO cycle run

Sales history adjustment

Forecast meeting

Market intelligence/adjustment

Planners review

New SSF or last month forecast maintenance

Publication

Critical/complex product

Lower value / simpler products

CORE PROCESS
MONTHLY

New APO cycle run

Sales history adjustment

Forecast meeting
Market intelligence/adjustment

Planners review
New SSF or last month forecast maintenance

Publication

QUARTERLY

Forecasting Models Review

Model Optimisation

SAP APO Model Updates
In the past forecast process was supported by either graph from excel:

- Remove the support of the statistical forecast from APO
- Excel was more preparation work and could have some mistake or realignment issues
- APO was a black box in which we would only paste forecast agreed previously on excel/DRP => extra work
- Planners skills with APO were very low
Graphical interface

- Long sales history and forecast horizon help to detect trend or old recurring event
- Interface simple and easy to understand for non-supply chain people
- Allow planners to implement change live and compare versus sales
Sale history correction

And on sales history!

Clinical trial with
Graphical interface

- Highlight sale history correction: stock issues, abnormal oversales
- Long sales history allows to detect trend, understand behaviour on more cycles
- Track any manual adjustment planner have implemented against statistical forecast

SANOFI COMMERCIAL

ADDVANTAGE
### Table Interface

![Table Interface Image]

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The table allow comments to keep track of manual adjustment on forecast...

New listing with +10% sales expected from March 2013
## Customization

### Example Table

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</table>

- **Forecast Validation Status**: 1
- **Proposed Forecast (unit)**: 5,157
- **Outbound Forecast (units)**: 5,157
- **Previous Forecast (1 month) (units)**: 5,333
- **Social Sales History (units)**: 1,936
- **Social Sales History Adj. (units)**: UNT
- **Total Social Sales History (units)**: 1,936
- **Social Statistical Forecast (units)**: 5,157
- **Social Forecast Adj. (units)**: UNT
- **Social Forecast Adj. (%)**: UNT
- **Total Social Forecast (units)**: 5,157
- **Budget (units)**: UNT
- **Suggested Forecast**: "Remove unneeded lines from table e.g. domestic information etc..."
- **Average Forecast Accuracy in %**: UNT
In Summary

- **Focus** and time spend on **key products** through portfolio segmentation
- Make the **best use of the statistical** forecast offered by APO
- **Optimize model** and portfolio segmentation through IF

Use **APO as a core tool** of the process
- No preparation work and no mistake!
- Long sales history and forecast horizon which keep record of comments on adjustments, one off events, trends etc...
- Changes agreed at the same time that they are implemented => no extra work for implementation
- Develop planners skills with APO => more confident and efficient with the tool