Three main pillars drive and increase the maturity of the forecasting process

Financial Modelling & Predictive Analytics

Driver based forecasting allows users to effectively predict and estimate business drivers and immediately evaluate the financial impacts of those decisions.

Predictive Analytics enables companies to produce consistent and well-understood metrics / reports based on internal and external information available across the organisation.

Both help in understanding the market, the product portfolio new trends, and reduce time and cost required to effectively analyse information, forecast outcomes, and drive decision making.

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Aligning Strategy, Finance & Operations contributes to improving organisational efficiency, accountability and insights.

More specifically, the forecasting process should be part of an integrated planning cycle to establish and ensure an environment for successful execution of the strategic directions of the organisation.

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**In-Memory Computing, Multi-dimensional OLAP & Cloud Solutions**

The flexibility and scalability of cloud based platforms mean they can serve as a basis for financial, commercial as well as operational planning models.

In-Memory Computing offers the possibility to model different what-if scenarios in real time and immediately evaluate the final outcome.

Furthermore, these models can easily be linked and work in seamless integration with one another, enforcing cross-functional collaboration.
Predictive planning overcomes day to day planning hurdles

Common planning hurdles

- **Misaligned Goals**
  "Our planning, budgeting and forecasting processes work too much in siloes, they are not always aligned with our corporate strategy & metrics”

- **Uncertainty Around Inputs**
  "Our executives do not have any clear definition of the drivers in the forecast or the rationale”

- **Inconsistent Processes**
  "Because we do not have standard methods on how to manage forecasting, the departments compete and all claim to have the best method”

- **Inaccuracy**
  "Due to our matrixed business model, there is a confusion in ownership and mistrust in the planning processes”

- **Excessive Time Commitment**
  "We spend too much time and effort on forecasting rather than business partnering”

- **Inability to Drive Action**
  "Our forecasts have become a check-the-box exercise and is not a process to help lead value-creation and action”
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Model based forecasting attributes

- **Comprehensive**
  Engage with multiple stakeholders aligned around corporate strategy

- **Customer-Tailored**
  Not one size fits all – drivers pinpointed to your business

- **Consistent**
  Control process and approach variability

- **Accurate**
  Enable transparency and visibility into forecast accuracy and productivity opportunities

- **Fast**
  Shorten the forecast cycle by up to 30%, freeing Finance to deliver analytical insight

- **Dynamic**
  Model multiple scenarios on-the-fly and perform sensitivity analysis
Improving the business partnering activities

Moving to a predictive model for sales forecasting will improve insights and free-up time for value adding business partnering activities. Deloitte will help you seize this opportunity.

As a business partner finance:
- Understand the business needs and concerns
- Anticipates and guide the business
- Is one of the first person called when there is a crisis
- Provide value added service and actionable insights
- Provide the right insight even if it is hard insight
- Well connected in the business and always stays in close contact with them

Deloitte will guide you on the path to improving your business partnering capabilities

Role
Agree on the broad shift required from Finance towards improving as business partners

Moments that Matter
Identify moments when Finance should respond and moments that Finance can create

Interventions
Pinpoint the specific areas where Finance can have a more meaningful impact on the business

Improvement
Evaluate how to address the challenges in capacity, capability and collaboration for each intervention

Moments of impact
Create a manifesto that articulates how things will change and what is different
High maturity of statistical models enables proactive decisions making for the business.

**From data to impact**

- **What is happening?**
- **Why did it happen?**
- **What is likely to happen?**
- **What should I do about it?**

**Descriptive**

*Standard analysis*

**Types of analysis**

- Transactional reports
- Pivot tables

**Crunchy questions**

- What is the performance of my current finance processes and do they satisfy my internal client?
- The gross margin for this month is 4.3M$, compared with last month this is an increase of 2%. The main increase is coming from the APAC region.

**Diagnostic**

*Complex analysis*

- Trend analysis
- OLAP analysis
- Price volume analysis

- To what extend did we realise the strategic objectives by doing several projects and continuously improving processes?
- The impact of the new elected government has a negative price impact of 3% while the total volumes sold increased over the last months on a certain product segment.

**Predictive**

*Complex analysis including scenarios*

- Data mining (prediction)
- Sensitivity / What-if analysis
- Monte Carlo simulation

- What are the leading external indicators that can improve my latest estimate?
- What volume do I expect to sell over the next 3 years in Africa and what is the country with the biggest growth potential. Given the fact I expect an epidemic in the largest country, what impact could this event have on my planned sales level in 2 years.

**Prescriptive**

*Complex analysis including scenarios to take decisions*

- Determine optimal allocation
- Target measure distribution

- How should I grow optimally based on different possible scenarios and taking into account company constraints?
- What is the optimal price I can ask for my product in Germany given the constraint my local production plant still have 20% free capacity. What will be the impact be on the volumes sold in the neighbour countries applying the optimal price.
The digital journey leads to the business oriented finance community of tomorrow.
Selecting the right forecasting methodology
We will clearly define the business objectives and how the forecast should provide value helps to select the right mix of approaches

### Human estimation
Driven by 'expert' input while not necessarily relying on a specific (documented) model, potentially involving a consensus component

### Driver-based
Decomposing a (to be predicted) outcome into its underlying operational drivers (e.g. PxQ) to make a better estimate
Can be leveraged in a Monte Carlo approach by sampling said drivers from their (assumed) underlying distribution

### Statistical
Using a mathematical approach that based on a set of assumptions (e.g. "there is a linear relation") describes a deterministic relationship between variables – often many models are tested to find the 'best fit' (through back-tested MAPE calculation)

### Machine learning
Approach to learning from data without relying on pre-defined rules, i.e. algorithms that rely on data-driven discovery to achieve predictive power

- Appropriate method depends on complexity of the (forecasting) problem as well as intended outcome
- More data-driven means more difficult to understand 'why' questions (black box effect) – especially applicable to machine learning
- Conceptually speaking all are increasing levels of sophistication of similar approach (describing ever more complex relations between ever more variables)
- In practice a combination (e.g. based on segmentation) will typically be relevant
Predictive Planning - Finance Transformation

We will clearly define the business objectives and how the forecast should provide value helps to select the right mix of approaches.

**Selecting the right forecasting methodology**

**Rule-driven**

- Increases understanding of new markets, trends and events
- Reduces time and cost required to analyse information, forecast outcomes and drive decision making

**Data-driven**

- A well balanced mix of driver-based modelling and predictive analytics can leverage the advantages of all forecasting types.

**Driver-based**

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**Balance**

A well balanced mix of driver-based modelling and predictive analytics can leverage the advantages of all forecasting types.

Based on the organisational needs and forecasting requirements, the forecasting models use different mixes of the forecasting types, with a made to measure mix for each forecasting need and solution.
A successful output is a combination of historical data and forward looking expert judgement. Iterations with your Finance data and commercial expert will significantly improve model efficiency.

- Incorporate influence of **strategic and commercial/go to market decisions**
  *E.g.: Introduction of pre-filled syringe format had an impact on sales*

- Estimate **influences of integrate idiosyncratic events** on forecast
  *E.g.: Supply chain disruption*

- Derive the consequences of internal and external **events that have never happened before**
  *E.g.: Change in regulatory or health insurance environment*

- Reflect and evaluate **unforeseen macro-economic developments**
  *E.g.: Recession, collapse in wealth will impact of non critical medicine consumption*

- Evaluate unexpected incidents and expected behaviors and include them in the **model setup**
  *E.g.: Anticipate possible uncertainties in demand landscape, integrate both therapeutic area and product lifecycle characteristics*

**Our flexible methodology incorporates:**
- external inputs and Pharma industry experts inputs,
- sensing the market and competition,
- factors in therapeutic areas and product lifecycle considerations
Knowing underlying drivers in order to understand your forecast and the assumptions

**Market Insight Drivers**
- Brand Share Growth
- Volume Share Growth
- Seasonality / Holiday Shifts
- Regulatory Changes
- Price Elasticity
- Competitor launches

**Finance Drivers**
- Volume planning
- Price planning
- Gross to Net Sales price planning

**Analysis**
- Cross Country Analysis
- Accuracy and growth Analysis
- Growth Analysis
- Price Volume Analysis
- Pricing analysis
- Sensitivity analysis

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The integration in the integrated business planning
Integration of sales forecasting process with the Budgeting & Forecasting (FP&A) process is key to achieving integrated business planning.
The forecasting horizons of the different plans and the relations between LO, budget and plans

<table>
<thead>
<tr>
<th>LO Forecast</th>
<th>Annual Budget</th>
<th>Mid-Term Plan</th>
<th>Long-Term Plan</th>
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</table>
| • Typically updates the budget made the prior year  
• Depending on changed assumptions or on deviating actuals.  
• Usually this exercise is done once every quarter, with a focus on the year-end of the ongoing fiscal year or in case of a rolling forecast for a fixed number of quarters / months | • The annual budget can either be combined with the mid-term plan exercise or the third quarterly forecast, considering the overlap in time horizon  
• It can however also serve as an exercise for a very specific purpose, as in setting forth the ambitions and/or cascading targets for the upcoming fiscal year | • The Mid-Term Plan provides an outlook on the near future  
• It can be particularly relevant for pipeline products or indications reaching their expected launch date in order to correctly anticipate production and supply chain requirements | • A longer outlook, typically at a less granular level of detail  
• Often as a form of extrapolating the trends from the previous exercise and/or by modeling very specific events and assumptions  
• Considering the uncertainty of some of these events, a risk- or uncertainty adjustment factor can be modelled in to provide a range rather than a fixed number |

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The predictive engine to automate the process and to increase accuracy

Adapt drivers and revisit assumptions based on accuracy checks on different levels
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