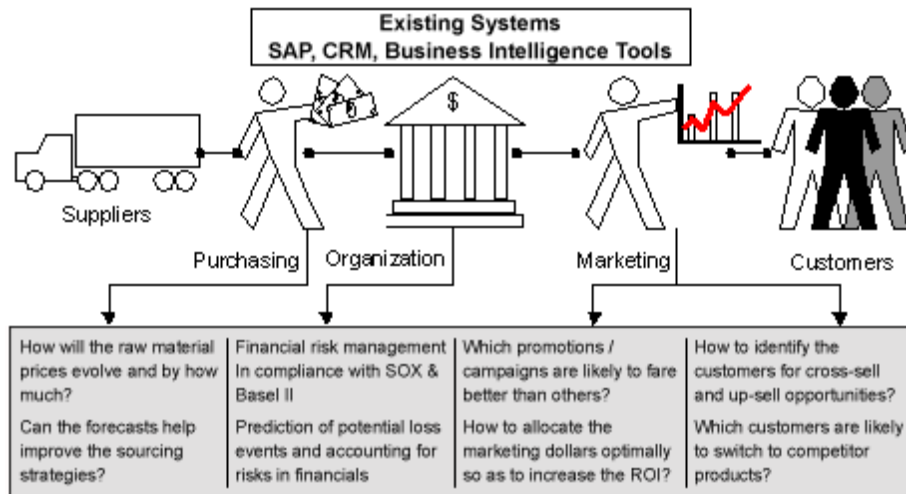


**My organization runs on ERPs, CRMs and BI Tools. How can analytics help?**

Which areas of my organization can benefit from analytics? Why should I invest in analytics tools or solutions if we already have enterprise systems like CRM, ERP and Business Objects?

These are pertinent questions, which this issue of DMD attempts to answer.

Traditionally, the enterprise-level IT systems and BI tools have been facilitating business operations in integrated, seamless fashion. They have also been associated with transactional data management and providing executive dashboards. While these are good at providing a 360° view of the as-is state of the business, it is the predictive analytics that adds scientific dimension to the decision-making process involving future outcomes.



**Figure 1: How Analytics can help a product-oriented organization**

Some of the questions that are of concern to the business decision-makers are:

- How to identify the customers for cross-sell and up-sell opportunities?
- Which customers are likely to switch to competitor products OR to put it in another way, how can we predict the customer churn so as to take preventive actions?
- How can we select one of the several locations to set up the next store?
- Which promotions / campaigns are likely to fare better than others?
- How to allocate the marketing dollars optimally so as to increase the ROI?
- How will the raw material prices evolve and by how much? Can the forecasts help improve the sourcing strategies?

Insights like the above and more require unlocking valuable information hidden in your historical data and also developing predictive capabilities. As Niels Bohr once famously said, prediction is difficult especially if it is about the future. The mathematical and statistical techniques that are at the core of predictive analytics provide these insights and also provide a scientific basis for decision-making. Let us explore how analytics can benefit some of the organizational functions.

**Purchasing**



**Related Links**

Online  
[en.wikipedia.org/wiki/Marketing\\_mix](http://en.wikipedia.org/wiki/Marketing_mix)  
[www.crm2day.com/customer\\_analytics/](http://www.crm2day.com/customer_analytics/)

Our Case Studies  
[Price Forecasting](#)  
[Sales and Operations Planning](#)  
[Churn Prediction](#)  
[Rostering And Optimization](#)  
[Profitability Analysis for Mortgage Lenders](#)

DM Direct  
[Financial Risk Modeling](#)  
[Choosing the right forecasting technique](#)  
[Allocation of marketing investments](#)

**About DecisionCraft Analytics**

We provide decision-making solutions to improve operational efficiency and business responsiveness. Our consulting services employ our strengths in industry knowledge, conceptual rigor, and information technologies. Developed using concepts from decision theory; our solutions use robust optimization, simulation, and statistical engines adapted to client focus areas.

**DecisionCraft Services**

**Business Diagnostics**

We analyze business processes and transactional data to identify underlying patterns, unravel hidden relationships and recommend areas for improvement that can improve ROI and reduce costs.

Raw material prices vary for a variety of reasons – supply-demand imbalances, trade policies between countries, weather to name a few. Future prices can be predicted with reasonable accuracy by identifying any inherent patterns in the data like seasonality, trend and by factoring the influence of price drivers.

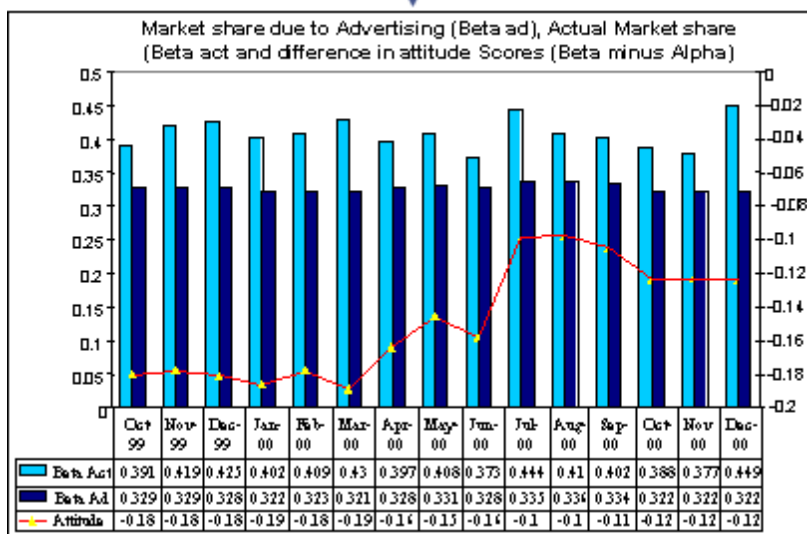
Advanced statistical modeling techniques such as ARIMA, ARIMAX and GARCH are used to forecast prices with high accuracy.

The techniques may be complex, but the tools/applications that provide these forecasts are built simple. Armed with such tools, the sourcing decisions and the hedging decisions can become more meaningful.

### Marketing

Marketing mix modeling & optimization is the discipline that equips marketers to measure the effectiveness of promotions, advertisements and optimally allocate budget across competing marketing channels. It also enables marketers to answer that embarrassing question of ROI in terms of top-line impact of marketing. The optimization engine shows how to allocate the marketing budget for maximum sales and profit by using advanced optimization techniques (nonlinear programming).

MMM Approach	
•	ANOVA models
•	Hybrid (Decision tree and Logit/regression)
•	Multi-level models (hierarchical linear models)
•	Logistic regression models



### Customer Analytics

Predicting when and which customers will churn is of critical importance since it is not just losing the LTV (Life Time Value) of the customer, but also due to the high acquisition costs of new customers. Rule-based segmentation of customers will first give an indication of various segments that exist. Depending on the segment characteristics, the marketing strategies could differ and may lead to efficient identification of up-sell and cross-sell opportunities. Coupling this with churn prediction models will help marketers prevent the churning thus, maximizing the revenues.

Churn Prediction Approach	
•	Logistic regression procedure to identify relevant variables that explain churn.
•	Decision Tree model to predict the churn probability.
•	Decision Support System to analyze what-if scenarios and measure performances.

### Predictive Analytics

We use historical data intelligently to develop a view of future market trends and help our clients focus on the right audiences thereby developing their competitive edge.

### Forecasting

We use advanced time-series and regression techniques for forecasting behavior of critical business variables that allows our clients to plan for their resources intelligently.

Decile Chart	Captured Churners	Percentage Captured	Cumulative Percentage
1st Decile	927	63%	63%
2nd Decile	314	21%	85%
3rd Decile	16	1%	83%
4th Decile	25	2%	88%
5th Decile	29	2%	90%
6th Decile	33	2%	92%
7th Decile	31	2%	94%
8th Decile	40	3%	97%
9th Decile	24	2%	98%
10th Decile	25	2%	100%
Total	1464	100%	

These are just a few of the value additions that analytics can provide. Utilizing analytics, both product as well as service organizations can leverage the existing systems and build scientific decision-making capabilities. Other analytics solutions could be in managing risk (credit risk, interest rate risk, volatility risk), improving collection yields, resource optimization, online behavioral ad targeting, portfolio optimization. The list is by no means comprehensive and is only limited by the stretch of imagination.

Basel II and Sarbanes-Oxley regulations have stipulated stricter norms for financial risk management and the compliance to these regulations is not possible without analytics. Prediction of potential loss events and accounting the risks (VAR – Value At Risk) associated with such events into the financial statements becomes easier to manage with analytics at the top of organization-wide data collection & consolidation.

The message is clear. Decision-support systems that utilize scientific techniques have become a necessity to organizations and predictive analytics is the discipline to turn to!

**Next Issue:** [Optimize Search with Link Popularity](#)

**Previous Issue:** [Performance Based Routing in Profit Call Centers](#)