Market Response Functions: An Application Comparison

Application	Marketing Mix Modeling	Sales Resource Optimization	Demand-Driven Planning Model
Planning Issue	Size and allocate all or a portion of planned marketing budget including sales force for a brand (capacity constrained)	Size and allocate all or a portion of planned sales force budget across many brands	1) Optimize the forecast for maximum profit by maximizing ROI of total sales and marketing spend 2) Optimize the supply chain, guaranteeing it can make and fulfill the new forecast 3) Resize and reallocate the entire projected income statement in support of (1) and (2)
Organizational sponsor	Marketing	Sales	Marketing AND sales, together
Response function form	Continuous	Continuous	Piece-wise linear
Plan of record forecast updated	Yes, for products involved	Yes, for products involved	Yes, for the entire projected income statement's forecast
Independent variable	Entire marketing mix	Sales force expenditures	Total sales and marketing spend
How forecast optimized	Prescriptively; nonlinear programming	Prescriptively; nonlinear programming	Prescriptively; mixed integer and linear programming
Objective function	Profit proxy: contribution margin by product	Profit proxy: contribution margin by product See NOTE, below	***Profit***
Granularity of forecast	Weekly	?	***Monthly***
Best possible forecast, financially	No	No	***Yes***
Total sales and marketing ROI is optimal	No	No	***Yes***
Best possible forecast, operationally (e.g., observe constraints)	No	No	***Yes***
EMP's operational impact on installed applications	None	None	None; simply guarantees ALL firm's planning applications are executing against most profitable forecast with optimally feasible supply chain
Reference articles	Hanssens, Parsons, Schultz, Ibid,	Sinha and Zoltners,	Article being drafted

Reference Articles	"Integrating Market response Models in Sales Forecasting at Polaroid," pages 391-393	"Sales-Force Models: insights from 25 Years of Implementation, *Interfaces31:3, Part 2 of 2,* May-June 2001	

NOTE: From "Sales-Force Models" ibid, page S14: "…contribution margin is defined as net sales minus consolidated variable product costs, advertising and promotion costs, field-support costs and sales-force costs"