

EMP is necessarily mathematically optimal for a variety of reasons.

Thus, since no other planning system possesses all of EMP's optimization functionality, EMP represents necessarily the **next generation** of enterprise planning systems. [See comparison of three signature planning applications:](#) Financial Planning & Analysis, Sales & Operations Planning and marketing-modeling modeling with enterprise master planning modeling for affirmation.

These reasons include:

- 1. Prescriptive solvers are superior to descriptive solvers.** EMP employs **prescriptive** optimization techniques (i.e., what is the best possible X) rather than **descriptive techniques** (What will happen if we do X). Descriptive techniques are frequently referred to as "scenario analysis" or "enumeration" and are necessarily sub-optimal when the possible solutions are too many to evaluate individually. Such is always the case in any model which is seriously attempting to model the real world.
- 2. The more tradeoffs optimized, simultaneously, the more benefits obtained.** While some applications allow tradeoffs within the supply chain (e.g., supply chain network design), the forecast is fixed. Others allow tradeoffs within the forecast (e.g., marketing-mix modeling, sales resource optimization) the supply chain is fixed. However, EMP allows tradeoffs within **both** the supply chain **and** the forecast. **NO** other planning system has such functionality
- 3. The more closely the prescriptive objective function captures the value proposition the better.** EMP's objective function captures precisely the appropriate value proposition: profit. Conversely, in the two marketing prescriptive applications described in (2) above, the objective function is contribution margin, a not very accurate surrogate for profit. For example, quoting from Sinha and Zoltner, "Sales-Force Models: Insights from 25 Years of Implementation, *Interfaces* 31:3, Part 2 of 2, May-June 2001: "Contribution margin = net sales minus (consolidated variable product costs, advertising and promotion costs, field support costs and sales-force cost."
- 4. In any system, the sum of the partial optimum benefits is less than the system optimum benefit.** EMP optimizes the entire projected income statement with all of its functional silos **simultaneously**. Thus, even if individual functions within the enterprise used prescriptive techniques to develop their portion of the total enterprise-wide projected income statement (e.g., marketing, sales, manufacturing), the sum is necessarily suboptimal.