Chapter 6.3
Creating Knowledge for Business Decision Making

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INTRODUCTION

Business forecasts and predictive models are rarely perfect. A paraphrase of the Nobel winning physicist Neils Bohr is apt in this context: Prediction is difficult, especially if it is of the future. However, executives and managers in enterprises ranging from retail and consumer packaged goods to high tech and semiconductors have to resort to forecasting and planning about the future. Phenomenal growth and spectacular failures are associated with organizations depending on their ability to understand market directions and respond quickly to change. Relatively minor improvements in forecast accuracy and predictive modeling at detailed levels can translate to significant gains for the enterprise through better strategic decisions, continuous performance management, and rapid translation to tactical decisions. The key to these processes is the knowledge-based enterprise, which can effectively utilize information from multiple sources as well as the expertise of skilled human resources, to develop strategies and processes for creating, preserving, and utilizing knowledge. These efforts, spanning revenue-generation endeavors like promotion management or new product launch, to cost-cutting operations like inventory planning or demand management, have significant impacts on the top and bottom lines of an enterprise.

Advances in scalable mathematical model-building, ranging from advanced statistical approaches and data mining (DM) to operations research (OR) and data assimilation, can extract meaningful insights and predictions from large volumes of data. Information technologies and e-business applications can enable a degree of process automation and collaboration within and among enterprises. Enterprises of the new millennium can truly take advantage of scalable but cutting-edge data-dictated approaches to understand the past and predict the future, and then focus valuable planner resources on key value drivers or exceptional situations through human-computer interaction, which in turn utilizes tools like online analytical processing (OLAP) and automated or planner-driven decision support systems (DSSs).

Analytic information technologies enable managers of the knowledge-based enterprise to choose the path to new revenues, new markets, good customer service, and competitive advantage over their rivals. The ability to produce "one-number forecasts" that reconcile information from multiple sources and blend disparate points of view is a critical first step for enterprise-scale strategic, operational, and tactical planning (see Figure 1). However, this is a challenging process, especially in recent years owing to short product lifecycles, mass customizations, and dynamic markets, combined with the ever-increasing service expectations of consumers and trading partners on the one hand, versus the need to reduce operating and inventory costs on the other. The need to manage product lifecycles and promotions or pricing decisions, factor in market signals or competitive intelligence, analyze consumer behavior, and achieve buy-in from multiple participants within and across enterprises has fundamentally changed the way the forecast

Figure 1. "One-number forecasting" for an enterprise
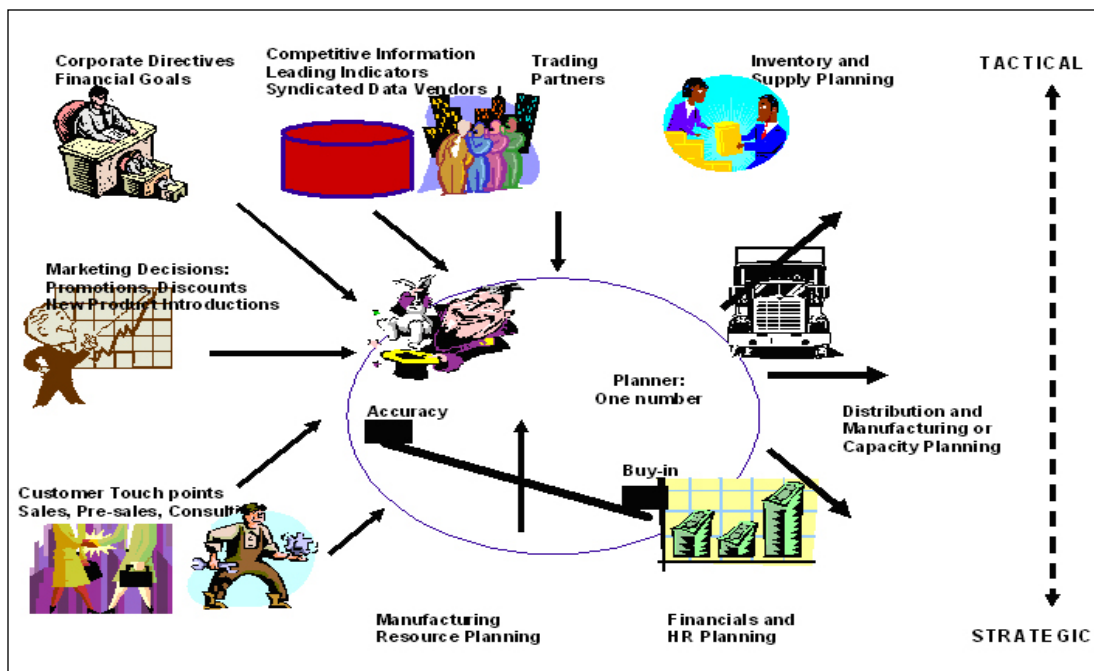
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