IDEA GROUP PUBLISHING **ITB11598**

701 E. Chocolate Avenue, Suite 200, Hershey PA 17033-1240, USA
Tel: 717/533-8845; Fax 717/533-8661; URL-http://www.idea-group.com

This chapter appears in the book, *Global Integrated Supply Chain Systems*
edited by Yi-chen Lan and Bhuvan Unhelkar © 2006, Idea Group Inc.

Chapter III

Demand Forecasting for the Net Age: From Thought to Fulfillment in One Click

Edward D'Souza
eSymbiosys Inc., Canada

Ed White
Bayer Canada Inc., Canada

Abstract

Picture this. The year is 2025. A customer is watching a new razor blade advertisement on interactive TV. The customer clicks to approve the purchase. When the order is received by the vendor, demand forecasting systems match customer experience data and integrate parameters—frequency of usage, preference of color, style of hand grip, language spoken by the customer, font style for customer's name to be engraved on the razor, and so forth—into the Global Integrated Supply Chain Systems (GISCS) process. The next interaction is the customer receiving the order with a six-month supply of blades in the shortest possible time at a very affordable price. This will truly represent the process of thought to fulfillment in one click. This chapter explores the role played by demand forecasting for the net age—an age where customers can be anywhere and wants to have their needs addressed the moment they think about them. The organization that can fulfill the needs of these individuals in the easiest, fastest, and most cost-effective way will win their business. Such organizations will win over their competition and, in the process, reap profits. Any error in the thought to the fulfillment of the supply chain will result in a dissatisfied customer and, in all probability, loss of future business

to the competition. Meeting the demands of an anywhere-anytime environment requires more than just-in-time Supply Chain Management (SCM). It needs to move to the next level to what we call just-in-mind SCM. Demand forecasting for just-in-mind SCM requires the organization to do global thinking and local linking. The global thinking helps to forecast the demand, and local linking helps to fulfill it. The chapter helps the reader to understand the challenges faced by organizations in forecasting demand in the net age, gives real-life examples of these challenges, provides solutions for addressing them, and takes a look into the future.

Introduction

Why do businesses forecast demand requirements? They forecast demand requirements so that they make or acquire the right material in the right quantities at the right time. This allows them to keep costs low, customers happy, and their company profitable. The problem with this is that all forecasts, by their very nature, are inaccurate. If you knew exactly what you would sell and when, then it wouldn't be a forecast anymore; it would be a requirement. Even in businesses where they are selling 100% of their capacity, there is a need to forecast, so they can determine the most profitable mix on which to use that capacity and as a justification for increased capacity. If there is only 10% more business available, it does not make a lot of sense to increase capacity by 100%, although you might want to consider growing the capacity slowly as demand grows. When forecasting, it is also necessary to consider the variability of the demand. For example, in a city with 1,000,000 people, you can make a basic assumption that something in the neighborhood of 1,000,000 breakfasts will be consumed every morning. The problem with forecasting those breakfasts is that it will not be 1,000,000 servings of the exact same breakfast. Some people will have one type of breakfast; others will have something different. Some people will have large servings, while others will have small servings. To make the situation even more complicated, the amount of variability will change dramatically, based on time of year, region, economic conditions, or even religious events. This means that even if you developed an algorithm that worked in one city, you may not be able to extrapolate it to any other city or even to the same city at a different time of year. So, with such uncertainty in the breakfast market, is forecasting a waste of time? Absolutely not! As long as you realize there are inherent inaccuracies and pay attention to how inaccurate any given forecast is likely to be, it can be an extremely useful tool to help any organization in both its long- and short-term planning. This is a truism that has been recognized by most organizations, and, hence, forecasting has become an integral part of business planning in all organizations. Admittedly, some organizations are a little more informal in how they forecast than others, but even the most informal organization makes daily decisions on what is about to happen within the organization based on someone's best guess or forecast about the future. The question we need to ask is, how will this process of forecasting the demands of a company's product or services change in the future (new age), based on economic, sociological, and technological changes in the environment? In order to answer that question, one must first anticipate and study the sort of changes that are expected in both the short term and long term and then consider how best to