Some parts of the current paper first appeared in Lee and Whang (1999).
Abstract
e-Business has emerged as a key enabler to drive supply chain integration. Businesses can use
the Internet to gain global visibility across their extended network of trading partners and help
them respond quickly to changing customer demand captured over the Internet. The impact of
e-business on supply chain integration can be described along the dimensions of information
integration, synchronized planning, coordinated workflow, and new business models. As a
result, many of the core supply chain principles and concepts can now be put into practice much
more effectively using e-business. Significant value can be created by e-business enabled
supply chain integration.

1. Introduction

In recent years, the increasing complexity of supply networks, the globalization of
businesses, the proliferation of product variety, and the shortening of the product life
cycles have necessitated companies to work on new supply chain strategies. These
strategies call for tighter coordination and collaboration of supply chain partners, and
are often called “supply chain integration.” The advancement of information technol­
gy and the use of the Internet provide a great opportunity for a new era of supply
chain integration. We have seen tremendous advancement of electronic commerce as
a new retail channel for buying and selling goods and services via computer networks
like the Internet. Such development, of course, has redefined how the front-end of the
business can be conducted. However, the use of the Internet for business-to-business
interactions and exchanges will have a much greater impact in supply chain manage­
ment. It can redefine how the back-end operations of a supply chain can be run, and
result in new supply networks and services. This is the exciting development that we
are witnessing in supply chain management, and the term “e-business” has emerged
to be a concept that marries the Internet with supply chain management.

E-Business is defined here as “the execution of the front-end and back-end opera­
tions in a supply chain using the Internet.” Since a supply chain involves multiple
companies and organizations, e-business naturally will be cross-enterprise in nature.
E-Business has been driving supply chain integration to a new level (see Lee and
Whang 1999, for some early impacts of e-business on supply chain integration), and
new models and values are continuously being developed. By using e-business for
supply chain integration, companies can realize great value through efficiency
improvements, better asset utilization, faster time to market, reduction in total order
fulfillment times, enhanced customer service and responsiveness, penetrating new
markets, higher return to asset, and ultimately, higher shareholder value (see Lee
2000).

2. Supply Chain Integration and e-Business

How has e-business facilitated supply chain integration? There are four key dimen­
sions in which the impacts can be found: Information Integration, Planning
Synchronization, Workflow Coordination, and New Business Models (Table 8.1).