A Relative Comparison of Leading Supply Chain Management Software Packages

Zhongxian Wang, Montclair State University, USA
Ruiliang Yan, Indiana University Northwest, USA
Kimberly Hollister, Montclair State University, USA
Ruben Xing, Montclair State University, USA

ABSTRACT

Supply Chain Management (SCM) has proven to be an effective tool that aids companies in the development of competitive advantages. SCM Systems are relied on to manage warehouses, transportation, trade logistics and various other issues concerning the coordinated movement of products and services from suppliers to customers. Although in today’s fast paced business environment, numerous supply chain solution tools are readily available to companies, choosing the right SCM software is not an easy task. The complexity of SCM systems creates a multifaceted issue when selecting the right software, particularly in light of the speed at which technology evolves. In this paper, we use the approach of Analytic Hierarchy Process (AHP) to determine which SCM software best meets the needs of a company. The AHP approach outlined in this paper can be easily transferred to the comparison of other SCM software packages.

Keywords: analytical hierarchy process; expert choice; multiple objective decision making; supply chain management software

INTRODUCTION

A supply chain represents the veins of a business; it is a network of facilities and distribution options that perform the functions of material procurement, the transformation of materials into intermediate and finished products, and finally the distribution of finished products to customers. Supply chains are not specific to any one industry; they are inherent in both manufacturing and service based organizations. Supply chains do however vary in complexity from industry to industry and even firm to firm. The process of managing supply chains is a multi-billion dollar software industry; the worldwide market for SCM software topped an estimated $6 billion in 2006 and is expected to
reach $10 billion by 2010 (a compound annual
growth rate of 8.6%) (Trebilcock, 2007).

Supply chains are evolving to meet the
changing requirements of the companies try-
ing to manage them. A few years ago simply
having full visibility of your own supply chain
was seen as extraordinary. Now that visibility
is no longer enough; companies need to be
agile in respect to their supply chain (Croom,
Romano, & Giannakis, 2000; Bartels, 2006).
Companies need to make educated business
decisions based upon the information captured
in their information systems.

SCM systems are used to coordinate the
movement of products and services from sup-
pliers to customers (including manufacturers,
wholesalers, and retailers). The system’s main
objective is to manage warehouses, transpor-
tation, trade logistics and various other issues
concerning facilities and the movement and
transformation of materials en-route to cus-
tomers.

The components of SCM include (but are
not limited to) supply chain event management
and optimization, warehouse management,
radio frequency identification (RFID), transpor-
tation management, demand management,
supplier relationship management, and service
parts planning. Beyond the traditional elements,
SCM software has also incorporated modules
for international management; this is the direct
result of the growing need for businesses to
manage supply chains that include a mix of
global suppliers, manufacturers, and company
owned plants. In fact, the bursting demand for
global SCM has led the upsurge in the worldwide
market for SCM systems (Aksoy & Derbez,

Why Compare?

Research has found that the typical U.S. manu-
ufacturer is managing an average of more than
30 contract relationships (Trebilcock, 2007).
Wholesalers are distributing to worldwide re-
tailers and jobbers for resale; and retailers now
staff virtual storefronts that service customers
globally. The growing supply chain requires a
management system that is efficient and caters
to the needs of each enterprise. The benefits of
implementing an appropriate SCM system in-
clude: Increased top-line profit growth through
supplier teamwork; Reduced inventory carrying
costs and stock-outs; Increased customer ser-
service; Supply chain visibility; Optimization of
the value chain respective to cost reduction and
bottom-line improvement; Reduced corporate-
wide operating costs; Increased competitive-
ness; and Quick adaptation to changing markets
without detriment to customers.

However, since SCM system implementa-
tion is typically not a small scale operation, there
are inherent managerial risks. For example,
within businesses with several facilities, part-
ners, and departments etc., a legacy or manual
SCM system can lead to bottlenecks. There are
cases where the appropriate SCM application
is chosen but it does not sufficiently integrate
with the rest of the enterprise software ap-
plications. In some cases, the wrong SCM
application is chosen (perhaps to cut costs or
due to poor information); the result is that the
whole business from sourcing to distribution
is negatively affected. Efficient SCM provides
immense benefits; a well-run value chain should
positively impact an organization’s profitability
and success.

SUPPLY CHAIN MANAGEMENT
SOFTWARE

While there are a number of SCM software
providers, the major players have maintained
their top positions. For example, in 2005 the top
5 ranked providers were Manhattan, RedPraire,
SSA Global, Swisslog, and SAP AG (O’Neill,
2005); in 2007 the top 5 spots were manned
by Manhattan, RedPraire, SAP, Oracle and
Infor (who swallowed up SSA) (Trebilcock,
2007). In selecting SCM software vendors to
compare for this study, the following criteria
were utilized:

• Limited to those providers offering world-
wide solutions
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