



# Supplier Integration in Web-Based Supply Chains

Somendra Pant, Rajesh Sethi, and Anju Sethi  
Clarkson University, School of Business  
Potsdam, NY 13699-5790  
(315) 268-7728, [pants@clarkson.edu](mailto:pants@clarkson.edu).

## EXTENDED ABSTRACT

It is increasingly being argued that in today's competitive marketplace, an important way of securing strategic advantage for companies or original equipment manufacturers (OEMs) is the use of highly integrated supply chains. In such chains, the OEM, its key suppliers, and distributors operate as one integrated unit to effectively serve the customer. Integrated supply chains are expected to enhance productivity, lower costs, reduce response times, and lead to the development of superior new products. More and more OEMs are either already implementing or are planning to embrace such integrated Web-based Supply chains (Teach, 2002).

The main responsibility for the creation of an integrated supply chain falls on OEMs. They decide which of their suppliers should become the primary or main partners in the chain and which will be secondary suppliers. The trend is to have few key suppliers for a particular part or material. Thus, suppliers who are included in the supply chain get a large share of the OEM's business. However, OEMs, in turn, expect quite a bit from these suppliers by way of technological infrastructure, commitment, and identification with the supply chain. Generally such suppliers are expected to install sophisticated Web-based supply chain systems that are compatible with the OEM's systems and provide open access to the OEM to their information systems, databases, drawings, and documents.

However, suppliers may not share the same view that OEMs have regarding integrated Web-based supply chains. They may see a number of risks in joining an integrated supply chain and thus may hesitate to do so. From the suppliers' perspective, they are being asked to tie their future with that of the OEM in a major way. Providing the OEM a great deal of access to their information systems, databases, drawings, and documents makes suppliers feel vulnerable. In addition, often suppliers are small or medium in size and are subject to price and other pressures from the OEM. Another cause for concern is that while suppliers often do not have the technical infrastructure to implement a fully integrated supply chain management system, they are pressured by the OEM to do so. This ends up increasing costs and eroding supplier profitability. In view of the above, suppliers face a real dilemma. On the one hand they have the concern of being exploited by the OEMs in integrated supply chain systems; on the other hand they run the risk of being left out by the OEMs and falling behind competition.

Some key factors that are likely to make suppliers reluctant in joining integrated supply chains are information technology infrastructure (Wagner, 2001), lack of embeddedness of information systems (Uzzi, 1996), business process redesign (Grover, 1993), and low level of trust between suppliers and OEMs (Munson, 1999; Hart, 1997; Premkumar et al 1994, 1995). We also expect that there are likely to be several additional important considerations that can make suppliers particularly hesitant in joining integrated supply chains. The purpose of our research effort is to identify many such considerations that have escaped the attention of supply chain researchers. We briefly discuss one such issue below.

*Suppliers' Willingness to Acquire Supply Chain Identity.* If a supply chain has to work successfully in an integrated manner, it is important that its members work toward the interest of the overall chain rather than their own interests. This requires that members identify with the supply chain rather than merely with their respective organizations and perceive a stake in the success of the chain (Mackie and Goethals 1987). High chain-based identity enhances the perception of intra-chain similarities and leads to psychological acceptance of individuals from other partner organizations and their work methods

(Ashforth and Mael, 1989; Mackie and Goethals, 1987). In other words, a feeling of psychological ownership of the supply-chain arises among individuals from different partner organizations, which enhances cooperative behaviors. However, individuals in supplier organizations are likely to have separate deep-rooted organization-based identities. Since individuals tend to behave in ways that enhance their organizational identities, they prefer the work methods, goals, and time horizons of their own organization over those of others (Ashforth and Mael 1989). Also, some suppliers can have a fear that if they integrate themselves very strongly with supply chains of OEMs, it can affect their identity. Thus, unless suppliers are highly motivated to join the supply chain and merge their identity with the supply chain identity, and unless they have carefully thought through how they will maintain their own organizational identity while still participating in the chain, they may have problems getting integrated into the supply chain. Thus issues of interest that emerge are: how does organizational identity of suppliers affects their involvement in OEMs Web-based supply chain initiatives, and, furthermore how does the level of identification of suppliers with that of OEMs affects their commitment to the OEMs Web-based supply chains.

*Research Method* We propose to adopt the grounded theory approach to study the implementation of integrated supply chain systems at a few firms and their suppliers' though intensive interaction and close observation. We have already identified a major distributor of industrial goods in the US that is implementing an integrated web-based supply chain system with its key suppliers. Over the duration of this research we will visit the distributor and its suppliers and observe the phenomena of its integration into the supply chain system, hold discussions with people involved, carry on structured and semi-structured interviews with managers and IT personnel, and participate in their planning sessions or meetings. We will then analyze the information so gathered and triangulate different sources of information to draw conclusions. Interviews will be content analyzed to identify themes that emerge, which, in turn are expected to lead to new theoretical insights into supplier-OEM relationships in highly integrated chains. Since the proposed research adopts a grounded theory approach with a view to gaining new theoretical perspectives, these perspectives will need to be subsequently tested through detailed surveys.

## REFERENCES

- Ashforth, Blake, E. and Fred Mael (1989), "Social Identity Theory and the Organization," *Academy of Management Review*, 14 (January), 20-39.
- Grover, V. An empirically derived model for the adoption of customer-based interorganizational systems, *Decision Sciences* 1993; 24 (3), 603-649.
- Hart, and Saunders, C. (1997). Power and Trust: Critical Factors in the Adoption and Use of Electronic Data Interchange, *Organization Science*, January-February, 23-42.
- Mackie, Diane M. and George R. Goethals (1987), "Individual and Group Goals," in *Review of Personality and Social Psychology*, C. Hendrick, ed. Newbury Park, CA: Sage Publications, 144-66.
- Munson, C. L., Rosenblatt, M. J., and Rosenblatt, Z. (1999). The Use and Abuse of Power in Supply Chains, *Business Horizons*, January-February, 55-68.
- Premkumar, G. and Ramamurthy, K. The role of interorganizational and organizational factors on the decision mode for adoption of interorganizational

systems, *Decision Sciences* 1995; 26 (3): 303-335.

Premkumar, G., Ramamurthy, K., and Nilakanta, S. (1994). Implementation of Electronic Data Interchange: An Innovation Diffusion Perspective, *Journal of Management Information Systems*, Vol. 11, No. 2, 157-176.

Teach, E. (2002). Working on the Chain, CFO Magazine.

Uzzi, B (1996). The source and consequences for embeddedness for the economic performance of organizations: The network effect, *American Sociological Review* 61: 674-498.

Wagner, M. (2001). Customers warming to Oracle11i. *InternetWeek*, November 26, 2001, p. 12.

0 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

[www.igi-global.com/proceeding-paper/supplier-integration-web-based-supply/32203](http://www.igi-global.com/proceeding-paper/supplier-integration-web-based-supply/32203)

## Related Content

---

### Model-Driven Engineering of Composite Service Oriented Applications

Bill Karakostas and Yannis Zorgios (2011). *International Journal of Information Technologies and Systems Approach* (pp. 23-37).

[www.irma-international.org/article/model-driven-engineering-composite-service/51366](http://www.irma-international.org/article/model-driven-engineering-composite-service/51366)

### A Work System Front End for Object-Oriented Analysis and Design

Steven Alter and Narasimha Bolloju (2016). *International Journal of Information Technologies and Systems Approach* (pp. 1-18).

[www.irma-international.org/article/a-work-system-front-end-for-object-oriented-analysis-and-design/144304](http://www.irma-international.org/article/a-work-system-front-end-for-object-oriented-analysis-and-design/144304)

### Using Maturity Model to Govern Information Technology

Asim El-Sheikhand Husam A. Abu Khadra (2009). *Utilizing Information Technology Systems Across Disciplines: Advancements in the Application of Computer Science* (pp. 90-109).

[www.irma-international.org/chapter/using-maturity-model-govern-information/30720](http://www.irma-international.org/chapter/using-maturity-model-govern-information/30720)

### Probability Based Most Informative Gene Selection From Microarray Data

Sunanda Das and Asit Kumar Das (2018). *International Journal of Rough Sets and Data Analysis* (pp. 1-12).

[www.irma-international.org/article/probability-based-most-informative-gene-selection-from-microarray-data/190887](http://www.irma-international.org/article/probability-based-most-informative-gene-selection-from-microarray-data/190887)

### A Rough Set Theory Approach for Rule Generation and Validation Using RSES

Hemant Rana and Manohar Lal (2016). *International Journal of Rough Sets and Data Analysis* (pp. 55-70).

[www.irma-international.org/article/a-rough-set-theory-approach-for-rule-generation-and-validation-using-rses/144706](http://www.irma-international.org/article/a-rough-set-theory-approach-for-rule-generation-and-validation-using-rses/144706)