Technical Note

ENTERPRISE INTEGRATION, INC.

Business Process Networks

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Introduction

In the commercial world the word “Chain” is used to describe how suppliers relate to each other and their customers. It is widely known that a more descriptive term is “web” or “network,” since suppliers are not typically serially connected. The concept is presented in Figure 1.

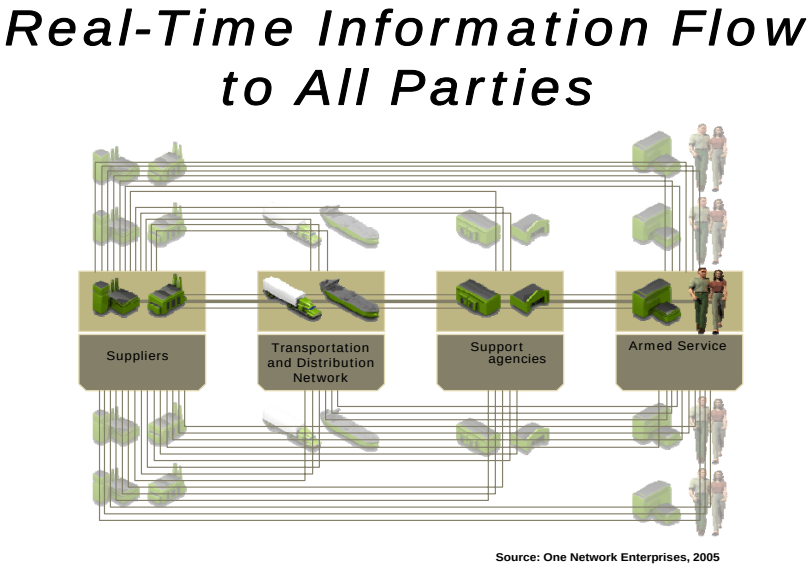


Figure 1: Supplier Network

Supply chain visibility requires that all nodes within the network have real-time access to each other. Effective Supply Chain Execution requires that an unfavorable event at any node is instantaneously logged and the necessary modifications within the network are made based on the new information.

ARC Advisory Group defines this enterprise market segment as Supply Chain Process Management (SCPM), which is enabled by software that uses alerts to indicate when supply chain events have not occurred according to plan. The information alert updates are useful when synchronizing multiple business units within the supply chain

The Solution Space

A number of companies provide Supply-Chain Process Management solutions. SCPM software is often part of larger systems from vendors such as i2 Technologies, Manugistics, and SAP. However, there are in fact a number of smaller, more specialized companies that provide this information such as One Network Enterprise, Descartes Systems Group, Timogen Systems, Savi Technology, and Yantra. The market is highly fragmented and consolidation has occurred with the larger supply-chain vendors asserting more impact over time. In addition, the vendor offerings are all different with widely varying capabilities associated with each product offering. We provide an example from One

Network Enterprise in this note.

One Network Enterprise

One Network Enterprise[1] is considered a pioneer of innovative solutions for Business Process Networks. One Network provides an integrated platform for managing transactions and business processes that span multiple organizations. The following bullets provide some features of the solution.

One Network models the entire supplier network:

- The model includes every connection, from the smallest supplier to the largest manufacturing facility.
- This includes all execution facilities (i.e., network nodes) that might produce an alert.
- It also includes the tracking of all resources such as transportation assets, containers, etc.

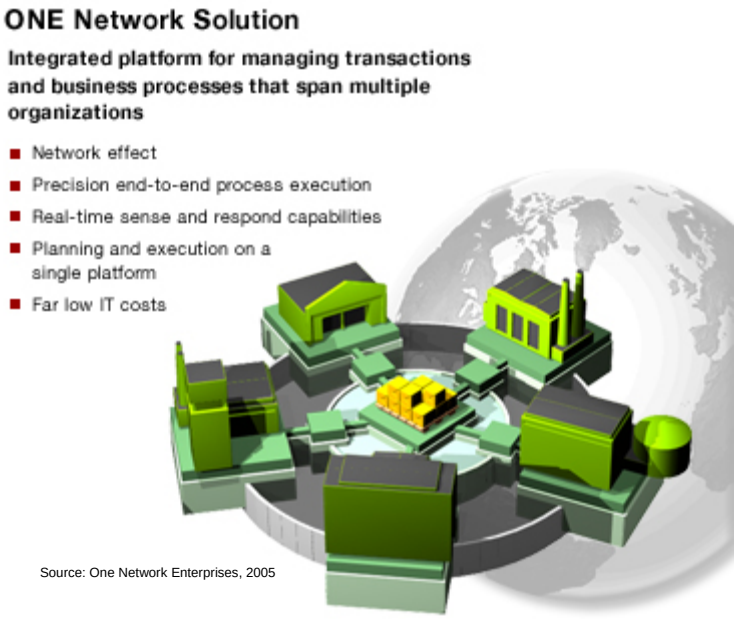
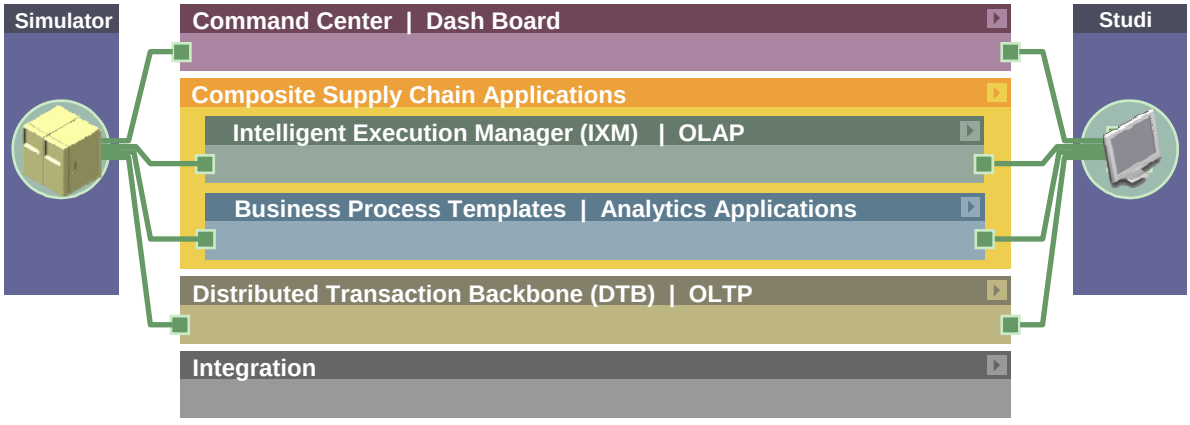


Figure 2: Integration across multiple organizations

[1] One Network Enterprise is usually called “One Network” in causal conversation.

One Network uses the network model to prepare a plan; i.e., a view of the future. The plan includes inventory and manufacturing requirements based on demand plans, consumption rates, or forecasts. Transportation routes and appropriate mode selection is based on pre-defined business rules or simulations that help validate plans and capabilities. One Network analyzes the physical requirements necessary to execute the fulfillment of orders as the plan is executed and revised.

The activities in the plan are executed in a dynamically changing environment. The supply chain execution process within this solution (a composite application) creates orders, shipments, movements, coordinates and tracks all assets and provides real time in transit visibility. When issues arise within the supply chain process, they are addressed as they occur. Processes may be created for, but not limited to, re-routing late shipments, changing the allocation of inventory, redirecting supply lines, ordering more products expediting shipments and gaining inventory visibility. One Network has developed a Many-to-Many environment approach to span across multiple organizations. This allows for greater visibility and transaction management. Figure 3 illustrates technically how One Network plans on executing an end to end solution using their Studio application. The key here is that One Network uses a proven platform template that is customizable for any organization.



Source: One Network Enterprises, 2005

Figure 3: End to end scenario of BPN Platform

The solution can be wireless, HTML, disconnected, or sensor based (including RFID). In fact, One Network recently signed an agreement with Zebra technologies to provide a full RFID offering that is called the RFID Fulfillment Network. This is a complete solution[2] that includes:

- "A Zebra Technologies R110Xi Printer, the industry's most advanced RFID printer, including all printer service, supplies and consumables for a per-label fee.
- Zebra Technologies RFID labels.
- The One Network Global backbone for managing RFID tag creation and customer notification and communication.

[2] See PR Newswire, 2006.

- The One Network Logistics backbone for managing the end-to-end process that spans building the shipment, completing the transportation management, appointment scheduling, and in-transit visibility."

The end-to-end business processes are composite applications that are modeled to fit exact customer requirements while still supporting legacy systems where required. This means that One Network has a solution to all of the data and interconnectivity problems associated with composite applications, including federated query and all associated data quality issues that are related to federated query.

Relationship to Enterprise Resource Planning (ERP)

How does SCPM relate to ERP? This question is often asked, and in some cases SCPM and ERP have overlap. Major ERP vendors (SAP and Oracle) provide SCPM solutions although there is not significant overlap with core ERP. ERP, a popular name for Standard Software, provides *integrated* business applications across the enterprise. ERP systems have their origins from two sources: Manufacturing Resource Planning (MRP) systems and Financial Accounting systems. MRP software providers added human resource, financial, and other functionality to evolve into an ERP system. An example of this type of Standard Software Solution is the Microsoft Solomon solution. Financial Accounting solution providers added human resource, manufacturing, and other functionality to evolve that has evolved into an ERP system, an example being the Microsoft Business Solution that evolved from Great Plains Software.

At the definition level, SCPM is a point solution that provides interconnectivity and visibility across firms. SCPM is an inter-enterprise integration solution that pulls data from legacy and other systems, including ERP, to provide alerts, visibility, and execution capabilities. In this sense, SCPM is a "federated" solution that constantly addresses the "Data Integration" challenge.

ERP provides pre-designed integrated business processes for enabling traditional back-office business areas such as Finance, Human Resources and Inventory Management. ERP is an intra-enterprise integration solution that is implemented in a single enterprise. ERP pulls data from a production database so the data integration challenges in support of the core back-office processes are addressed through a pre-go-live data migration/conversion process.

There are a number of other ways to compare the product areas, but in reality they were designed to accomplish achieve different goals. SCPM was not designed to implement an integrated finance and material management solution. Likewise, ERP was never designed to provide visibility across supplier networks. As SAP and Oracle expand their offerings to areas outside of core ERP, they will place tremendous competitive pressure on current SCPM vendors since they can leverage the integration with their combined ERP offerings. This threat is even stronger as the large vendors re-architect their products to deliver shared services and extensions via composite applications.

Conclusions

This note provides some overview information about Supply Chain Process Management, a solution area that manages Business Process Networks. The characteristics of SCPM solutions are described

using an example from a major SCPM provider, One Network Enterprise. Additionally, SCPM is compared to ERP, and the major assertion is that the solutions were designed for different purposes. There is no trade-off, and the implementation domain is strictly dependent on the strategic goals and objectives of the implementing organization.

References

PR Newswire, One Network Announces RFID Fulfillment Network; Partnership with Zebra Will Revolutionize RFID Economics, January 13, 2006.