# Cisco case study

**Introduction**

Cisco Systems of San Jose, California, is a company that develops networking devices such as switches, routers, network management software, and dial-up access servers. By the mid 1990s, realising that growth depended on our ability to scale manufacturing, distribution and other supply chain processes quickly, Cisco managers decided to reinvent its business model and turn itself into a Web-enabled company. ' An ecosystem' which in fact transformed the entire supply chain into an extended enterprise system based on internet technology was created in order to links customers, prospects, partners, suppliers and employees in a multi-party, multi-location electronic network.

This article is trying to analyse how Cisco can successfully implemented ' ecosystem' by considering what approaches they used to manage their whole supply chain. In order to achieve this objective, an overview of e-business and e-supply chain will be fist presented to identify why it is important and worth implementing in Cisco. In the second section, the ' ecosystem' will be evaluated in terms of upstream supply chain, downstream supply chain and internal human resources in Cisco. Thirdly, e-supply chain, as a whole, will be discussed. At last, a conclusion will be made to summarise the issues which will be discussed in the second and third section.

**An Overview of E-business and E-supply chain**

E-Business can be defined by Chaffey (2002, pg 8) as " all electronically mediated information exchanges, both within an organisation and with external stakeholders supporting the range of business processes." It links

internal employees with external customers, suppliers through technology like Internet, intranets, and extranets. He further states that there are two general advantages that motivate organisations to implement e-business, which are:

- Increase potential revenue results from broader reach of customers and encourage loyalty and repeat purchases.
- Realise cost efficiency, which is derived by providing service electronically.

E-commerce, conceived as a subset of e-business, can be categorised as buy-side e-commerce which are equivalent to upstream supply chain and sell-side e-commerce which equate to downstream supply chain. According to Rehan (2006), A ' supply chain' is a network of facilities and distribution options that performs the functions of procurement of materials, transformation of these materials into intermediate and finished products, and the distribution of these finished products to customers. An effective supply chain management can improve efficiency throughout e-business.

As a result from the case, Cisco estimated that in financial year 2000, a total of US$695 million would be saved by adopting this interconnected supply chain. These solid figures prove the potential benefits e-business can bring into Cisco are enormous. Broadly speaking, it is argued that there are at least two primary ways in which the application of e-business technologies can improve the efficiency of a supply chain (Slyke and Bélanger, 2003). First is known as disintermediation, which organisation eliminates the communication and coordination costs associated by eliminating links in the supply chain. The second way is by lowering the cost of communication and

coordination among the various members of supply chain. In this case, Cisco adopted the second way by using information technology to communicate, which enable faster, more accurate, and lower cost information exchanges with its trading partners. The way to lower the cost of communication and coordination in Cisco will be analysed below in terms of upstream, downstream and internal human resources issues.

**Upstream issues (Buy-side)**

Upstream supply chain is the transactions between an organisation and its suppliers and intermediaries (Chaffey, 2002). In this particular case, Cisco outsourced most of the manufacturing and logistics activities as James Crowther, customer business solutions manager said, in order to increase production capacity enough to meet demand. According to Bocij (2003), outsourcing is a business activity subcontracting a process, ' product design or manufacturing, to a third-party company. Cisco's suppliers not only make all of the components and perform 90 per cent of the sub-assembly work, but they also undertake 55 per cent of the final. By outsourcing production of 70 percent of its products, Cisco has quadrupled output without building new plants. Furthermore, through Cisco Manufacturing On-line, Cisco has created an extranet application that increases productivity and efficiency in the manufacturing, supply, and logistics functions among globally networked partners. The accomplishment not only increased the outputs but left Cisco free to concentrate on their real strengths: new product development, looking after customer needs and brand management.

**Cisco Manufacturing Connection Online (MCO)**

Since relationships with suppliers are especially critical in the E-conomy, Cisco has created an Extract application that leverages productivity and efficiency in the supply function through MCO, which can be viewed as supply chain portal that seamlessly connects Cisco to its contract manufacturers, distributors, and logistics partners. The core of MCO dealing with their supplier is centralising the process control and as a consequence decentralising actual execution. There is a three-part strategy to scale its upstream supply chain in a cost-effective manner in MCO:

Auto test. To resolve the testing problem, Cisco has installed automated test cells on all Cisco-dedicated supplier production lines using Cisco-developed technology to automatically configure test procedures for each specific customer order so that the quality could be controlled and the cost of deploying a test engineer could be saved. However, although Cisco outsourced much of the physical test, the company retained the intelligence behind the testing.

Direct Fulfillment. Cisco launched a global direct fulfillment model under which most of the company's manufacturing partners can now ship directly to customers. This will reduced the distribution cost between Cisco and supply chain partners.

Dynamic replenishment. By direct linking to the suppliers, Cisco could gain real-time access to supplier information so that delivery lead-times, errors and inventory will be cut and the productivity of its employees involved in

purchasing will be improved. The purchasing teams can focus on more strategic activities such as partnership and business development.

The implication of increasing outsourcing of core activities is that companies will move towards the virtual organisation which leads to a more responsive and flexible company with great market orientation (Chaffey, 2002). As Pete Rukavina, Cisco's director of global supply chain management, addressed:

" For every Cisco manufacturing employee there are six virtual manufacturing employees who use Cisco processes, are measured against Cisco metrics, and are located around the world."

Virtual manufacturing is not only a Cisco thing. " Hewlett Packard, IBM, Silicon Graphics, and others have sold plants to contract producers such as Solectron, SCI Systems, Flextronics, and Celestica- then signed up these manufacturing specialists as suppliers," Business Week (Port, 1999) reports.

Traditionally, a new product introduction had been a process in which engineering, procurement, manufacturing and marketing were performed sequentially in time-consuming steps. Cisco has networked these functions in order to extract real benefits with its partners. A perfect example could be car industry where car plants traditionally would be located nearby the raw material factory so that inputs directly from factory will be produced as a result of cars. However, there has been a trend to outsourcing more and more components such as lights, trim and even engine to third party. Just-in-time of Toyota was created base on the outsourcing strategy.

**Downstream issues (Sell-side)**

Downstream supply chain is the transactions between an organisation and its customers and intermediaries (Chaffey, 2002). There were some potential issues which Cisco has faced in the process of selling products in the past:

- One-third of all faxed orders. Due to the nature of fax, orders will inevitable

  contain errors sometimes so that it will delay the processing. In addition, 15

  per cent of the number of orders required reworking

- Sundry expenses. Delivering software purchases to its customers on CD

  by a freight forwarder will generate a cost of delivering.

- New product introduction. Time-to-market of new products is counted in

  months or years.

Cisco Connection Online is introduced in order to deal with these issues.

**Cisco Connection Online (CCO)**

As Crowther explains: " Customer Connection Online is essentially a web portal to information stored in Cisco's enterprise resource planning [ERP] databases, legacy systems and client/server systems, and acts as a comprehensive resource for our customers, resellers, suppliers and partners." In fact, it used the Internet as the prime customer contact channel so that customer information and decision-making feeds directly into the

supply chain. Chaffey (2002) stated that technology is vital to supply chain management since managing relationships with customers, suppliers and intermediaries is based on the flow of information and the transactions between the parties. Customers rely on CCO to answer questions, diagnose net work problems, and provide solutions and expert assistance worldwide based on four components of CCO:

- Market-place. It is a virtual shopping center in which customers can

  purchase items online. It also offers users tools for configure, price, route

  and submit orders. This function can be used to solved the first problem

  mentioned above which is lots of errors contained in fax. With the

  introduction of Market-place, customers rarely make purchasing mistakes

  by ordering online. Only 2 percentages are required rework.

- Status Agent. It gives Cisco's sales force, as well as direct customers and

  sales partners, immediate access to critical information about the status of

  customers' order. The sales force can not only prevent possible billing or

  shipment problems by accessing order information but also save time such

as tracking order status in order to devote to building relationships with

customers and seeking new business opportunities.

- Customer Service. It provides nontechnical assistance on a self-help basis

  for customer requests. No one is better motivated to help the customer

  than the customers themselves. The self-service model which Cisco is

  committed is argued to know as raising the customer satisfactory

  overall.

- Technical Assistance and Software Library. It enables customers and

  business partners to get online answers to technical questions and

  download software updates and utilities for Cisco hardware, which saved

  over US$500, 000 per year in freight forwarding charges.

- Specifically, the Web gives Cisco both a vehicle through which

  customers can find out about products and buy them and an

  automated support system that can reach a larger audience. Modern

  marketing philosophy requires that organisation be committed to

  customer orientation (Jaworskis and kohli, 1993). It is important that

  introduce a new product earlier than competitors because customers

  intend to accept the first new item. In the response of the third

  problem indentified above, Cisco automated the process for gathering

  product data information, thereby reducing the amount of time

required to less than 15 minutes. It is believed that this type of positive impact on time-to-market generated an extra US$388 million in income during 2000.

Furthermore, it is recognised that building strong customer relationships is the key driver to sustainable profitability (Chaffey, 2002). CRM is therefore considered to be the most important element within e-business context. Essentially, " CRM is an approach to building and sustaining long-term business with customers." (Chaffey, 2002, pg 330) It is about customer acquisition, customer retention and customer extension. It is recommended that the first step is to retain existing customer because the costs of acquiring new customers are so high that repeat business is essential. The next step is to acquire new customers on a profitable basis. It is argued that by giving customers tools for self-configuration and turning its back office into the customer's front office could be one of the best ways Cisco do.

### Internal human resources

Cisco's ecosystem looks inward as well s outward. Whereas CCO addresses the needs of Cisco customers, partners, suppliers, and employees, Cisco Employee Connection (CEC) is limited to information and services that address the unique needs of individual Cisco employees (Hartman, et al., 2000). As Hartman indentified, in order to improve employee satisfaction and scale its workforce without incurring unnecessary overhead, Cisco reengineered all its internal and external employee services. Applying the CEC, the following benefits can be provided.

- Ubiquitous communications. Every one of Cisco's employees around theworld is connected through the Cisco network.

- Streamlined business. The interactive tools reduce the time thatemployees spend handling repetitive tasks and streamline routinebusiness process.

- Integrated business systems. The CEC home page serves as thelaunching pad, all of information sharing the same navigational tools and a common user interface.

**E-supply chain (Both upstream and downstream issue)**

In today's digital economy, flexibility, adaptation and responsiveness are critical to success. Akyuz and Rehan (2007) considered the Internet as the greatest ICT (information and communication technology) tool, and ' integration' is the key to efficiency and success. The company Cisco has opened up its internal information systems to suppliers and other supply chain partners, giving the employees the same access rights to information as Cisco employees, and as a result enabling the Cisco ecosystem to act as a distributed knowledge management network. This networked ecosystem that leverages the collective capabilities of all supply chain partners integrates all supply chain activities so that it achieved successful e-supply chain management. The reasons for that can be described as:

- Firstly the ecosystem standardises and streamlines internal processes.

  The successful ERP system associated with CEC implementation forces

Cisco to standardise, restructure and streamline the ' internal'

functions.

Bendoly and Jacobs (2005) clearly state that ERP systems enable

organisational standardisation, including the standardisation

among

different locations belonging to the same enterprise.

- Secondly, the ecosystem streamlines external processes by

  seamless

  integration with suppliers and customers in terms of MCO and

  CCO.

  Materials and inventory position, product availability, price

  information,

  purchase orders and changes, vendor receipt/acceptance,

  Invoice

  payments and status reporting information are all visibile among

  partners,

  including design-related information and sales forecasts

- Thirdly, Cisco has formed strategic alliances and long-term

  partnerships

  with suppliers and customers, basing on mutual trust and win-win

  strategy.

Lack of mutual trust and unwillingness to share information among the

partners appear to be the greatest obstacles in the way of e-collaboration.

Comparing the Cisco ecosystem with SIMON (Shell Inventory Managed Order Network) which applied by Shell Chemicals, SIMON enables the transfer of responsibility for inventory management from customer to supplier (Chaffey, 2002). In other words, there is no need for customer to place an offer since vital inventory will be on customer. Customers pay only for what they consume. The SIMON is so successful in the downstream process that it was then applied to the upstream processes which are acquiring raw materials from supplier. Both Ecosystem and SIMON works in some extent due to the mutual trust and a belief that there are significant benefits to be realized on both side. The shared information between all parties in the supply chain is also critical to succeed. However, e-business does not always lead to organisation success. For instance, Webvan, a top internet grocer based in the US, went bankrupt in 2001, because of poorly implemented e-business and over depending on technology and missed out the customers and inter-organisation management.

To sum up, the ability to engage in collaborative planning and making joint decisions with both suppliers and customers are critical components of forming e-supply chain. Moreover, Campbell and Sankaran (2005) argued that lack of integration between members of a

supply chain results in operational inefficiencies that compromise the performance of the supply chain.

**Conclusion**

More than its innovative use of technology, Cisco has developed an Ecosystem that makes itself as transparent as possible. A well designed and implemented an e-supply chain model can automated all business functions so that seamless link to the entire supply chain via the web, with strong internal as well as external integration.

Within up and downstream supply chain issues, both MCO and CCO have been identified in detail in order to describe how well external integration is established. An outsourcing approach Cisco chose is explored in terms of upstream supply chain. In addition, market and customer relationship issues have been further analysed in terms of downstream supply chain.

In the view of internal integration, CEC has been developed to improve employee satisfaction and scale the workforce. In addition, benefits of apply CEC have been illustrated.

Last but not least, both upstream and downstream issues have been evaluated in the respect of whole supply chain management. The reasons for successful implementation of e-supply chain management have been discovered with the comparison of the Shell Chemical case and Webvan grocer case.

Themistocleous et al. (2004) comments that future competition will not be company against company but rather supply chain against supply chain. An ' integrated supply chain network' , which defined by

Viswanadham and Gaonkar (2006) as a group of independent companies, often located in different countries, forming a strategic alliance with the common goal of designing, manufacturing and delivering right-quality products to customer groups faster than other alliance groups and vertically integrated firms great, will be a core strategic capability as competitive advantage. In order to succeed the Cisco way, some recommendation will be given based on the discussion above:

- Win the word with e-commerce.
- Use the net to revolutionise both internal and external operations.
- Listen constantly to all parties include customers, suppliers and partners.
- Resist complacency that can accompany.

Generally speaking, supply chain management are important for the purpose of successful implementing e-business into all kinds of industry, which will arguably result in benefit such as cost saves, time saving, improve communication, better control, and create competitive advantage.