

Cisco systems was founded in 1984 at Stanford University by husband and wife team Leonard Bosack (who developed early router technology) and Sandra Lerner and three colleagues. Cisco is generally regarded as the leader in the market for inter-networking equipment. It is generally seen as the company which commercialised the router – a device which determines the optimal path along which packets of data should flow on a computer network. The growth of Cisco is also attributed to its setting of standards for networking equipment through its proprietary Internet Operating System (IOS). Both routers and IOS are key technologies supporting the Internet and enables customers of the company to build large-scale, integrated computer networks. Growth of the company has been driven by the surge in data traffic on the Internet. The company initially targeted universities, aerospace and government facilities relying on word-of-mouth and contacts for sales. The market for routers opened up in late 1980s and Cisco became the first company to offer reasonably-priced, high-performance routers. It went public in 1990 and soon after initiated an acquisitions strategy to broaden the range of products offered. Originally focusing on corporate data networking it began to target both Internet Service Providers and the home networking market.

The primary value-stream for Cisco is products, particularly routers. It has attempted to broaden the range of this value by offering a wider range of products. It also provides traditional added-value services such as its after-sale service. However, Cisco also provides value by managing its wider value-network with a range of partners. These include resellers that sell and support Cisco products, service specialists providing network integration and operations and

component manufacturers that provide most of the company's actual manufacturing capability.

Cisco's main transformation is the assembly of inter-networking equipment such as routers. The key inputs for Cisco consist of parts from a vast range of suppliers as well as a vast range of data associated with this supply. The key outputs from Cisco are completed products. The competitive environment for Cisco consists of companies producing comparable products in support of the infrastructure of the Internet. Control in the case of Cisco means ensuring that it has sufficient information about its internal operations to ensure the efficient and effective delivery of goods to its customers (regulation). It also needs to ensure effective monitoring of its competitive environment to ensure that it develops new products for its marketplace (adaptation).

Cisco engages in B2C and B2B eCommerce. In terms of B2B eCommerce it has integrated its ERP systems with key suppliers through an extranet. In terms of B2C eCommerce it has built a Web portal which enables its customers to order and configure products on-line.

It is possible to describe briefly some of the gains that CISCO experiences from its engagement with eBusiness. In terms of efficacy, Cisco is able to relate to a large range of suppliers and assemble a vast range of parts to produce its technical products. In terms of efficiency, Cisco uses B2C and B2B eCommerce as well as intra-business eBusiness to lower its costs. In terms of effectiveness, Cisco maintains that eBusiness has allowed it to grow quickly and allows it to more quickly adapt to environmental changes. It is therefore better able to compete in its key markets.

Cisco has implemented an e-Business strategy to enable fast integration of its supply-chain with key business processes. The supply chain is critical to the business as Cisco's manufacturing operation globally consists of 34 plants, only two of which are owned by the company. Suppliers make up to 90% of the subassembly of Cisco products and 55% of the final assembly. This means that suppliers regularly ship finished goods directly to Cisco customers.

A key component of Cisco's B2B eCommerce strategy is integration of its ERP systems with the information systems of its key suppliers. Suppliers use their ERP systems to run their Cisco production lines, allowing them to respond to demand from Cisco in real-time. This is enhanced by the introduction of Cisco Manufacturing Online, an extranet portal that allows partners to access real-time manufacturing information including data on demand forecasts, inventory and purchase orders.

Such a technical infrastructure means that changes in parts of the supply chain are communicated almost instantaneously to the company. For instance, if one supplier is low on a component then Cisco can analyse its supply chain for excess supplies elsewhere. Changes in forecasted demand are also communicated in real-time, enabling suppliers to respond immediately to requests for products or materials.


Payments to suppliers are triggered by a shop-floor transaction in the ERP system indicating that production is complete. The transaction initiates an analysis of inventory to determine the value of components sold by suppliers and triggers an electronic payment to suppliers. Annual benefits from the use of this ERP system integration are estimated to be in the realm of millions of dollars of savings per year.

Cisco has also engaged in B2C eCommerce innovation. It has introduced a Web portal known as Cisco Connection Online which consists of a dynamic online catalogue, a facility for ordering and configuring products online, a status agent which allows customers and retailers to track orders, a customer service section, a technical assistance section and a software library. The company currently estimates to earn 75% of its \$20 billion sales through its portal. The portal is also indicated as contributing to a 20% reduction in overall operating costs.

Cisco created an internal online community within its emerging technologies group, called the Idea Zone or I-Zone. Within this space anyone can propose ideas for new products, processes or markets. Ideas are critiqued by others and filtered for further development.

In 2011 Cisco is reported as having revenues of \$43 billion and employing over 71,000 people. This revenue was driven largely by its core business: sales of hardware devices such as routers and switches, software such as its network operating system and the provision of associated services such as network management. More recently however, Cisco has diversified into a large range of associated businesses such as optical networks, wireless equipment and internet telephony. It is also developing technologies associated with supporting the increase in video traffic via the Internet. As part of this strategy, Cisco has produced a technology known as telepresence which provides a high-quality videoconferencing facility.

Cisco has organised its structure around key functions rather than customer segments. To manage innovation in new markets it has introduced an elaborate system of committees made up of managers from different functions. Such committees are supported by fluid working groups. This form



of matrix organisation is supported by collaborative working using online tools

provided by the company itself, such as Telepresence.

### **Points for reflection**

- Cisco does have a general internet web-site. Could this be regarded as a form of B2C eCommerce? Who are the typical customers of Cisco?
- How much of Cisco business is P2P eBusiness? Does this company maintain partnership networks and what role does ICT play?
- Cisco uses an extranet to ensure integration of external relationships with suppliers. Consider the benefits as well as costs of extranets in managing the supply chain.
- Cisco is a heavy user of technology for collaborative working. How important are such online tools within companies worldwide?