

- **Creators-to-Consumers (C2C).** The singer known as Prince sold 100,000 CD's directly to fans on-line, by-passing all distribution channels.

Constant change has become a part of doing business. Today as geography has receded in significance, relationships have replaced products and services. The most important trait for winning in business will not be having the best products or services but having the best relationships (based on communications).

MOBILE ENTERPRISE

A mobile enterprise emerges along with the applications of mobile handheld devices such as personal digital assistants (PDA), handheld personal computers (HPC), computer panels, Web-enabled mobile phone handsets, and in-home consumer Internet access appliances. These devices take advantage of the General Packet Radio Service and Wireless Application Protocol (WAP). At the first glance, a mobile enterprise looks like a communicated enterprise. It is true, however, that the former requires a different *modus operandi* than the latter, as its operations require more complex business processes and management.

Wireless networks and satellite technology have developed to the extent that, in most places, one can connect to a LAN, WAN, and GAN. These networks are evolving to achieve the higher speeds, greater reliability, and easier access.

The applications of mobile devices differ among countries. In Japan and in most of the Asian countries mobile computers are used as desktop computers because of limited desk space. In Asia the young generation for years has been used to cellular phones, so it is natural for it to extend functionality of wireless phones in accessing enterprise systems or end-user computing.

In Europe and the U.S the populations have been familiar with using smart card in buying and paying almost for everything, so it is natural for them to expand capabilities of those cards under the form of expanded (digital) phones. In Finland, Nokia's country, there are more wireless phones than wired phones.

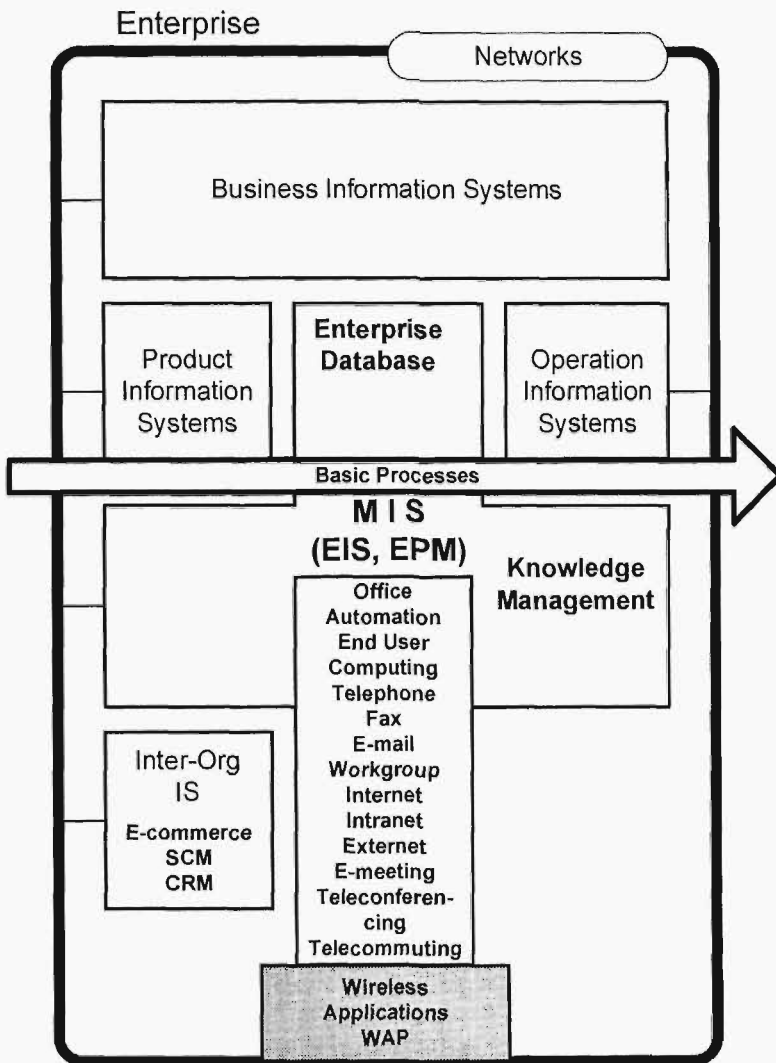
Those types of users are natural candidates for the users of a mobile enterprise. The power and features of mobile phones and handheld computers

will overlap. Hybrid devices that add PDA functions to mobile telephones will be more successful than PDA's that add voice capability.

Among the most popular mobile applications are:

- E-mail,
- Personal Information Management,

Figure 2-7: A Model of a Mobile Enterprise



- Access to Workflow Systems,
- Accessing an Enterprise Information Portal,
- Accessing ERP and CRM systems for status and fulfillment,
- Field-based updating of enterprise systems, such as a stock control system, maintenance information system, sales information system, and others,
- Field-based communications with the enterprise dispatching system,
- Other.

A model of a mobile enterprise is presented in Figure 2-7.

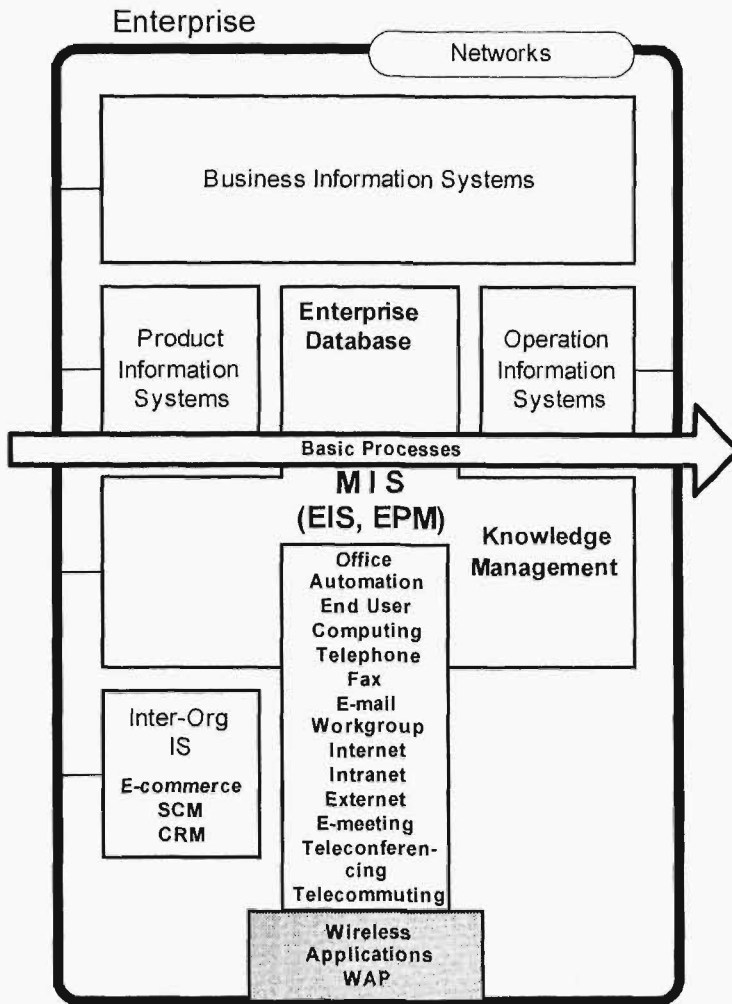
ELECTRONIC ENTERPRISE

The combination of technology and work organization creates an e-enterprise. In its full implementation it can include the previous enterprise configurations: off-line, on-line (networked), integrated, agile, informed, communicated, and virtual. Of course such an enterprise is very difficult to develop and manage. For many enterprise stakeholders such a multi-dimensional enterprise can trigger culture shock. Many companies develop their work and technology unaware of the high degree of complexity they precipitate.

A model of an electronic enterprise is shown in Figure 2-8, where the mission-critical systems are driven by the following solutions:

- Strong application of Web technologies to integrate all enterprise systems, for example by using the XML standard for data compatibility,
- Enterprise Information Portal (EIP) for external and internal stakeholders,
- Electronic Document Management System (e-DMS),
- Workflow System,

Figure 2-8: A Model of an Electronic Enterprise



- E-Business (converting business information systems into Web-driven solutions).

The goal of the electronic enterprise is to implement all major applications to build the extended enterprise that functions as a paperless organization, whose units and workers process information and communicate via all layers of the Enterprise Information Infrastructure.

VIRTUAL ENTERPRISE

As mass customization becomes more popular, organizations are finding it increasingly difficult to perfect and maintain all of the competencies needed to provide customer specific product/services. In light of this trend, it is becoming progressively more practical to form strategic alliances with other business entities which offer competencies complementary to the enterprise's own. Due to shorter product/service life cycles, the duration of such strategic alliances, which tend to be product/service specific, are often ephemeral. These short-term strategic alliances are often referred to as virtual enterprises (Goldman, Nagel, and Preiss, 1995).

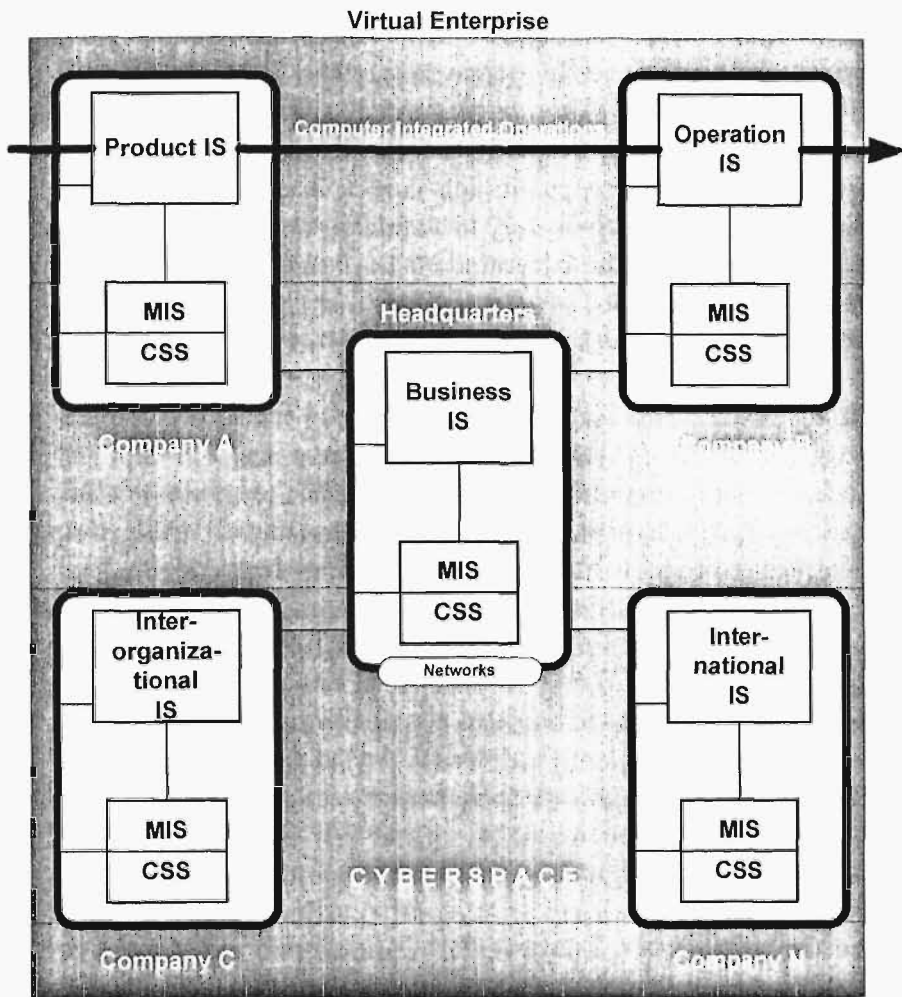
A virtual enterprise is formed dynamically, in response to customer demand, and is dissolved as soon as it becomes economically unviable. In order to appear seamless to the customer, the virtual enterprise depends to a great extent on information-communication technology (IT) (Goldman et al., 1995). In ideal cases, the virtual enterprise is fully connected through IT, and there is total sharing of information among all constituent organizations. It is possible, however, to achieve most of the advantages associated with the virtual enterprise without maintaining the total integration of systems.

Virtual enterprises are different from joint ventures and strategic alliances in their dynamism, since the former are more dynamic. They also differ in the fact that there is no obligation for the virtual enterprise to continue functioning as an entity after the current project is completed (Rampal, 1998).

The virtual enterprise does not refer to a single unit (company, firm, plant, and department) but to a network of independent business agents, whose business activities co-operate to achieve a common objective/task: research, development, production, marketing, sales, customer service. The virtual enterprise operates as a single entity towards the final customer/consumer who often is not aware of the complexity behind the product/service he/she is buying (Bielli, 1998). The architecture of a virtual enterprise is shown in Figure 2-9. The advantages of this enterprise system are:

- competitive position,
- reliance on non-transferable knowledge,
- innovations generation,
- expertise sharing,

Figure 2-9: A Model of a Virtual Enterprise (MIS–Management Information System, CSS–Communication Systems and Services)



- operations flexibility,
- short timeliness,
- transaction cost reduction,

- financial gains from synergetic effects,
- other.

The overall characteristics of a virtual enterprise have the following attributes:

1. Confrontation of a very competitive market,
2. Business network membership of several independent business units (companies, firms, plants, departments),
3. Common objective/task of the members,
4. Strong trust among the members,
5. Each unit-member contributes its own specialization and expertise,
6. Co-operation based on inter-organizational processes,
7. Common life as long as it is necessary to achieve a common objective,
8. Ad-hoc of specialists and business people (virtual teams),
9. Single enterprise image from the customer view point,
10. Support of and collaboration based on IT.

The virtual enterprise is considered as an ideal model which is being applied within the emerging new economy in developed countries. The virtual enterprise breaks down the linear sequence of a value chain and substitutes almost a parallel one for it. It means a shorter delivery time of products and services. There are many ways to implement a virtual enterprise, as it is practice in The United States, Japan, and Western Europe. One example of a virtual enterprise is presented here.

Diesel is an Italian company of the sportswear industry, producing jeans and garments (with several collections every year) with a strong image and high quality/price ratio. Explicit results demon-

strate Diesel's success: from 1.5 to 400 million dollar in 22 years, yearly growth rate (turnover) of about 15%, 12 subsidiaries around the world.

Peculiar is the production process at Diesel: only a few activities are kept within the company, those with the highest added-value for the final customer (R&D, communication, quality control, order collection). Everything else is subcontracted to small producers who are strongly specialized. This picture is common to the majority of fashion and garment producers in Italy, which count on powerful textile districts. However, two issues need clarification, as they differentiate Diesel and compare to a virtual enterprise: flexibility in selecting the subcontractors and the use of IT.

Even if Diesel has been operating in the same location since its foundation, it does not rely on stable relations with a single group of sub-contractors. Depending on the tendencies in their seasonal collections (in terms of fabric, sewing technologies, and accessories), Diesel involves a certain group of subcontractors and leaves others free, depending on the task at a given time.

The relationships among units are not purely of a subcontracting nature, as Diesel cooperates with them in order to find the best solution (from technical and economical points of view) for producing a specific article or for obtaining a specific effect (e.g., in dyeing or ironing fabrics). Flexibility for Diesel implies the ability of responding to market needs (fades and trends in fashion) with the most suitable collection, without being linked to existing expertise and materials. If a fabric is available in the Far-East, they want to be able to purchase it there without any geographical constraints. The second peculiarity at Diesel is the use of IT: while operating in an industry mainly based on human creativity and taste, Diesel applies IT whenever is possible and appropriate. The following IT systems are applied:

- CAD systems for engineering of collection,
- Databases of models and accessories are available for all designers,

- Groupware applications to communicate among participants,
- Common information systems operate in all units,
- Electronic layouts are transferred to all shops.

The ability to balance IT and trust-based relations is one of the most important goals of Diesel (Bielli, 1998).

In a virtual enterprise in which processes are partially internal and partially outsourced, subcontractors are treated as partners who are involved in a common process of accomplishing the task. Since new products/services require high levels of innovation, the search for that type of expertise is stretched from the local to global partners. The global reach of a virtual enterprise depends on the elaboration of trust and IT application among partners.

FUTURE TRENDS - THE 21ST CENTURY CORPORATION



At the beginning of the 21st century, the Industrial Economy is giving way to the New Economy and corporations are at another crossroads. Attributes that made them ideal for the 20th century could cripple them in the 21st century. The Darwinian struggle of daily business will be won by the people and the organizations that adapt to the new world that is unfolding.

The Real Assets: Ideas. The turn of the millennium is a turn from hamburgers to software. Software is an idea; hamburger is a cow. There will be hamburger makers in the 21st century, of course, but the power, prestige, and money will flow to the companies with indispensable intellectual property. You can see it already. At the end of the year 1999, Microsoft Corp., with just 31,000 employees, had a market capitalization of \$600 billion. McDonald's Corp., with 10 times as many employees, had one tenth of the market cap.

Or take Yahoo! Inc. – a virtual place in a virtual medium, the Internet. Although far below its peak price, Yahoo in 2000 trades at more than 40 times book value. If USX Corp.'s U.S. Steel Group traded at the same multiple to book as Yahoo, its market capitalization would be nearly \$90 billion, instead of less than \$2 billion.