Information services providers constitute a new and varied group. It could be argued that the oldest established members of this category are the libraries, which are still key organizations in modern societies. But if we concentrate on the idea of the coordination of modern information systems for other organizations as being characteristic of this group, then it still covers some interesting and varied enterprises.

Perhaps the longest-established type of firm are those which concentrate on developing bespoke (tailor-made) information systems for (mostly large) individual firms. Traditionally they are composed of systems analysts and programmers who first analysed customer needs, then helped specify the hardware to be bought, next wrote the code to be used, and finally supervised the installation and early operation of the new processes. The Yourdon consultancy in the USA would be a good example of this sort of operation.

With the development of relatively standardized PCs and sophisticated fourth-generation applications programs, such an approach is increasingly rare and often redundant. New firms have arisen and often focus on customizing a range of specialist software – perhaps a database product such as Oracle, or accounting or telesales products. In many cases hardware manufacturers such as IBM or software houses may run their own sales operations offering 'total solutions' to clients' problems. For the client, the choice of adviser may be a difficult one. An independent consultant may be able to save money by suggesting combinations of products from different sources, but may be reluctant to accept responsibility if a part of the system is not actually supplied by them. An adviser tied to a particular hardware or software product may be 'free' and wholly responsible for its success or failure, but his or her solution may well be unnecessarily expensive and elaborate.

A relatively recently offered solution to this dilemma is that of the outsourcer who provides and operates a complete system at a defined cost for

the client. The oldest established members of this group are perhaps those offering specialist services such as payroll operations and security back-up. By amalgamating operations and developing specialist expertise, out-sourcers may well be able to provide services at much less cost than an 'in-house' group. From a client perspective, however, as we shall see, there are drawbacks such as the need to define in advance the level of service required and a strategic dependence on a third party outside their control.

Case Study 2.5 **Information services provider: EDS**

EDS sees itself as the world's leading information technology services company. In the year 2000 its global turnover was $19.2 billion from 9,000 client organisations in 58 countries.

EDS supports 2.2 million desktops and 40,000 servers, and hosts websites for 750 clients. It processes 2.5 million ATM transactions a day and claims to be responsible for processing 11 billion daily transactions – equivalent to two transactions for everyone on earth.

Founded in 1962 as Electronic Data Systems, its early operations involved a handful of people processing clients' data by tapping into the idle time – usually at night – on other companies' mainframes. It now has 140,000 employees.

Its portfolio of services include Business Process Management, E solutions, Information Solutions and Management Consultancy. It stresses four themes in its relationships with customers:

- Collaborate in new ways: strategic alliances with customers and suppliers
- Continuous improvement: 'digitalise everything'
- Eliminate boundaries: operating anytime, anywhere
- Establish trust: 'gain customer intimacy, build digital wisdom and provide security and privacy'

An example of an EDS operation is Nova Scotia, Canada where EDS took over the mainframe computing operations of both the provincial government and the largest local telecommunications provider, MT&T, in a seven-year contract from 1992. Its data centre handles 350,000 interactive transactions per day in addition to 40,000 batch-processing jobs a month. All capital costs were met by EDS, which claims better service and lower costs have resulted.

Source: www.eds.com

Case Study 2.6 **An intensive information user: HSBC bank**

The following information, largely derived from HSBC's Annual Report, stresses the growing importance of IT for an intensive information user:

HSBC (formerly the Hong Kong and Shanghai Banking Corporation) can fairly claim to be one of the largest banking and financial services organizations in the world. It is the successor to a merger between a Hong Kong-based bank and one of the largest UK banks – the Midland. HSBC had total assets of US$674 billion and shareholders' equity of US$46 billion by the end of 2000. With a headquarters in London, HSBC operates through long-established businesses in five regions: North America, Latin America, Europe, Hong Kong, and the rest of Asia-Pacific, including the Middle East and Africa. A world network of about 6,500 offices in 79 countries and territories clearly requires a sophisticated communications system. The group provides a wide range of financial services to personal and commercial clients.

HSBC sees the Internet as one of several exciting new media, to be incorporated as an integral part of its working. The bank has concluded that e-commerce will change the fabric of the financial services sector and sees it as a way of finding new customers all over the world and improving its services to existing customers. It intends to use e-commerce to reorganize the business so as to provide higher-quality customer services more efficiently.

HSBC will be able to link its customers to the full range of inter- national services and manage their processing wherever it chooses, which the bank sees as a considerable competitive advantage.

HSBC has adopted a 'clicks and mortar' strategy. This requires that customer Internet offerings must meet three criteria: customer needs and preferences come first; they must fit HSBC's existing distribution channels; and they must be multinational in scope.

Recently the group has been reorganizing its work for the e-age and putting in place some major components of such a strategy. In 2000, over US$2 billion was spent on technology, including a significant pro-portion on dot.com initiatives. HSBC aspires to be one of the first to provide customers with facilities through the Internet on a multi-geographical, multi-product, basis.

IBM is developing an Interactive Financial Services (IFS) system for the bank which links in with the full range of customers' own tech-nology: the Internet, interactive TV, mobile phones and other wireless modes of data transmission. IFS is designed to give HSBC's customers

the freedom to access their finances where and when they wish. HSBC launched the UK's first nationally available TV banking service digital satellite provided by Sky in 1999. This has already attracted over 126,000 customers.

During 2000, HSBC has developed 'hsbc.com' as a brand name and a portal for its consumer services. By the end of 2000, Internet banking was available to HSBC customers in eleven of its businesses, including the United Kingdom, Brazil, Canada, the Hong Kong SAR, Singapore and the United States. Operations based in the Channel Islands serve Internet customers in 150 countries and territories. In 2000, in Brazil and France, HSBC began banking by mobile phone using WAP technology.

HSBC is a major supplier of collection, payment, account services and liquidity management throughout the world, so corporate customers and financial institutions can manage their cash efficiently on a worldwide basis. A key part of HSBC's strong market position in cash management is the flexibility of electronic delivery using Internet-enabled, file transfer or personal computers, as best suits the client concerned.

As long ago as 1989, HSBC's UK arm launched First Direct, the country's first complete 24/365 banking service by telephone. Despite the growth in competition, First Direct has continued to attract more customers. An Internet version of the service 'firstdirect.com', already has 270,000 clients.

Source: HSBC plc Annual Report 2000

Large-scale commercial and public sector users of information systems – intensive information users – cannot easily be distinguished from operations which are clearly part of the IT industry. Thus when the UK Department of Social Security out-sourced the operation of several of its major computer centres in a multi-million pound contract, the employees of these centres, now employees of EDS, were clearly part of the IT industry. It seems paradoxical to claim that they were not so before the out-sourcing, since their jobs were largely unchanged! Many parts of the financial services industry and the public sector, for instance, are now almost exclusively involved in the processing of information using modern technology. They provide a major part of the career opportunities for IT graduates and are major investors in hardware and software. Similarly, as we have seen, many engineering manufacturing operations not only involve massive use of IT in their production processes but may also produce products – from cars to washing machines – with special purpose chips built into them.

Table 2.1 IT industry by value chain contribution, 1992

Industry sector	*%*
Vendor support and professional services	36
Distribution channels	11
Packaged software	16
Peripherals	12
Processors	14
Semi-conductors	11
Total	100

Source: Moschella (1997, 32)

The International Data Corporation has produced some interesting (if presumably very approximate) figures for the relative contribution of differ- ent types of firm to the economic value created by the IT; these give some idea of the relative financial importance of each (see Table 2.1).