Case One: The Unused Office Automation System

The directors of a major manufacturing organization in the South of England were concerned by the time lags in their administrative systems. Memos were taking several days to reach their destination, and sometimes weeks to exploit replies. The purchase order requisition and ordering system was grinding to a halt, with items ordered for production now causing major hold-ups within the manufacturing process. Something had to be done. The IT Manager spoke of an off the shelf solution to this that would reduce paper work and speed up the whole process. The new product, costing $50000 in computer equipment and $20000 in application software, was ordered and installed.

Now, two years after this initiative, the purchasing department uses the computers to track its orders and invoices, but the rest of the hoped for benefits have not materialised: other intended participants within the company simply do not use the system, preferring to continue relying on mostly paper based communications.

There are many reasons why this may be so. The key issue here, however is that the system is considered to have failed not because it will not do what was intended, or that specification was wrong, or that could not be delivered. The system is installed and working – but most of the time it remains unused.

Case Two: Expectation Failure and the problem of multiple perspectives

Interact manufacturing management had reached the mid 1990s without using communication technologies, but felt that the time was right, in 1997, to build a local network of personal computers to enable improved internal communications and links to the wider world of internet.

The computer systems manager joined forces with a chosen supplier, and throughout 1997-8 achieved the implementation of a PC based computer network linking together all management and administrative staff. The key facilities provided were electronic mail and connection to the internet.

Only when the system was operational did the real problem begin to emerge. Almost daily, unsatisfiable requests were arriving. One Senior manager wanted a dairy facility between himself and key staff, but was told the system has “insufficient memory”. A designer had a frequent need to send plans to a US partner: previously this has been done by mail or fax, but now he decided to email them as attachments – the US partner was unable to read them. To add these problems, the systems disk capacity, designed for five years use, was overflowing within three months.

This highlights the problem with the correspondence concept, in that it relies on it being possible to reach an agreed specification for a system. In this case, not only was such a specification elusive, but the flexibility required of the final system was the one thing that the specification concept proved least able to provide.

Case Three: The London Ambulance Service

The London Ambulance Service (LAS) despatch system receives calls for ambulance attendance, despatches ambulances according to resource availability, and monitors the progress of all despatched ambulances, within the Greater London Metropolitan area.

This area covers around seven million people in the area of over 600 square miles. The ambulance despatch system deals with up to 2500 calls per day. A new computer aided despatch system was implemented on October 26, 1992, and was a project without precedent either in terms of technology or functionality. By November 4 of the same year it had been abandoned. Reasons cited for the failure of this system cover every aspect of systems failure. The main examples include:

The CAD system was over ambitious, untested, overloaded and had been developed and implemented against an impossible timetable. In addition the project management was poor.

Staff distributed the system and expected it to fail, and staff training was incomplete.

There was lack of consultation with users and clients in the development process: in particular, ambulance crews effectively did not participate through the implementation of the computer system.

The information that on 26 and 27 October 1992 the system did not fail in a technical sense seems to point to correspondence and process failure not being at the heart of the problem, although they were evident in the subsequent abandonment of the system on 4 November. Infact LAS is a classic case of a system which, for a variety of reasons, failed to meet the expectations of its users.

STRATEGIC ALIGNMENT

Corporate strategy and the problem of IS strategic support.

PT Engineering has been in the business for over thirty years, and in that time has forged an enviable position for itself as the market leader in the Malaysia supplying centralised suction pumps for office and domestic use.

The 1990s brought considerable changes to the suction pump market, with large multinationals entering into the supply of the smaller products which are the core of PTs activities. The market, in the space of five to ten years, has become truly global and dominated by companies which are able to transfer products and information across national borders.

PTs operation is underpinned by centralised information and control systems designed for internal efficiency to better service a known local market, but management recognizes the need to gain access to the wider, global markets in order not just to grow but to compete and survive. Nowhere, however, is this strategy documented, and at present neither the skills nor the will exist within the company to develop information systems able to support this as yet unwritten strategy. Aligning IT with the new corporate strategy is not an option, since the distance between them is too great, and PT is losing the battle to compete in its market place.

Strategic impact of applications under development

Strategic impact of existing applications	Low	High
Low	Support (Chemical Firm)	Turnaround (Grocery chain)
High	Factory (Distributor)	Strategic (Major bank)

INFORMATION SYSTEMS STRATEGIC GRID

CATERPILLER INC. FENDS OF COMPETITION

CATERPILLAR INC. of Peoria, Illinois is a world leader in manufacturing heavy machinery. In 1982, the company entered a difficult period. Komatsu of Japan, a major competitor, was offering bulldozers in the United States at prices 40 percent lower than CATs. Caterpillar was forced to cut prices. A poor economy and a lengthy labor strike worsened the situation. By 1985, the accumulated losses amounted to $953 million, Caterpillar which sells its products all over the world, responded to the downturn in all the usual ways. It closed plants, laid off workers, and slashed expenses But the usual ways did not work: market share declined and losses increased.

The IT Solution:

Management decided that the only solution lay in a state of the art information technology. CAT would not be globally competitive without it. The first phase of the information technology project lasted eight years and cost $2 billion. What did it accomplish?

Computer Integrated Manufacturing (CIM) , a dream at many companies is a reality at CAT. Robots, computer aided design, and computer aided manufacturing are functioning throughout the various plants. These and other computerised systems resulted in in-process inventory reductions of 60 percent and savings of several million dollars. Nonessential labor was eliminated, production processes were simplified, costly plants and warehouses were closed, lead time to build a product was reduced from 45 days to 10, and 'ontime' deliveries to customers increased by 70%. Modern management techniques, such as computerized Materials Requirement Planning II were installed, and computerized purchasing and logistics systems were put into operation. A sophisticated system for managing repairs and providing replacement parts to dealers and customers was installed. This system enabled dealers to provide parts to their clients quickly yet maintain low inventories.

Some other important IT applications at CAT are these:

- A Global network with 7000 terminals connects 50000 employees and 180 dealers in 1000 locations. This network is used for an EDI, for the internet, for other telecommunications applications, and intranet activities.
- An executive information system enables business units to analyze data, identify trends, and evaluate each dealers performance.
- CAT dealers and suppliers are on an EDI system.
- The telecommunication system includes a CAT TV link to dealers, as well as audio and video teleconferencing capabilities.
- Ninety five percent of the companys employees can access data on the companys enterprisewide system (an intranet).
- A world class repair and part inventory system was developed

The IT project supported a massive reengineering of the company.

The Results:

By 1993, Caterpillar had become stronger that its competitors, controlling more than 30 percent of the US construction equipment market. The firm was able to export more than half its sales to foreign buyers yet keep its manufacturing plants and the jobs in the United states. For its efforts CAT was a winner of Information weeks 1991 "Excellence in IS" award. And

what about CATs chief rival, Komatsu of Japan? Komatsu shifted its construction equipment strategy away from bulldozers in order to avoid head to head competition with CAT.