ARE INFORMATION SYSTEMS DEPARTMENTS DYING OR JUST DISAPPEARING?

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Information Systems Departments have a credibility problem within many companies. Many systems people have been retrenched or have seen Information Systems Departments being trimmed. This paper looks at the current situation, the ideal situation, and how to move from the former to the latter.

1 Opportunity

Many Information Systems (IS) people are concerned about their futures within IS departments and rightly so. Do IS departments have a future?

In every magazine, at every conference, the talk is of downsizing (rightsizing, smart-sizing), client server, open systems, outsourcing and so on. The fear is that IS departments have a limited future in many companies and that soon the users will run everything with the help of a few outside consultants. Is there a future for people like programmers and systems analysts when the trend in many companies is towards purchasing packages?

I believe that IS departments need to understand the change they will be going through and that they need to adapt in order to survive. IS departments have a unique opportunity to restructure, relearn and take control of their destinies. This paper will briefly examine some of these concepts and ways in which they either support or undermine the IS department.

2 The Existing Situation

If we look at the existing situation we see that IS departments have a credibility problem within many organisations. For years IS departments have promised increased productivity and other benefits whilst their costs have rocketed. The size of IS departments has grown and grown as has the size of projects they have embarked on. IS departments have been pushing other departments to change and restructure through automation. IS departments have been saying that all software should be replaced regularly, say every two years. IS departments have become a financial drain on many organisations. Dr Dan Remenyi [8] summed it up as follows: "If IS people stated the full cost of a project up front, no-one would ever allow us to start, so we lie and then later say that it is so complicated we need more money." Broobey's rather cynical "Law of Computerdom" which he espoused in 1972 stated "No major computer project is ever installed on time, within budget, with the same staff who started it, nor does the project do what it's supposed to do."

The gap between the Information Technology (IT) professionals and the rest of the organisation is growing. Some people in the IT industry have seen this gap and the organisation's focus on value for money, and so they have come up with a whole heap of new buzzwords (this is how we know that they were IS people) such as downsizing, outsourcing, open systems, etc.

Many companies feel that they are overspending on IT and are not reaping proportional benefits. Many IS departments have concentrated on the technology and the exploiting of the technology without reference or focus on the business.

3 The Ideal Situation

Companies have to start feeling that IS departments and IT are giving them value for money. IS departments have to stop pushing technology and start pushing the business. IS departments have to spend more time and effort to find business applications which exploit the existing IT within the company. IS departments have to stop focusing on themselves and integrate themselves into the business of the company for which they work [5]. IS personnel have to become loyal to the company rather than to the technology. IS has to focus on making the user successful rather than just satisfied.

4 Solutions

The major change that needs to take place is that
the IT professionals need to change their attitudes and way of doing business; they need to see themselves as just another division of the company whose primary aim like all other divisions is to ensure that the company survives. The IS departments need to reduce their costs to the company whilst maximising the benefit of IT to the company.

How does one ensure survival of a company and thus oneself? Ernest Hemmingway [7] said that the most important survival strategy is to develop a "built-in, shockproof crap detector". If one looks at the history of mankind, one could say that it has been a continuing struggle against the veneration of crap. There has been much anguish and suffering of people who tried to help their contemporaries to see that some or part of their fondest beliefs were misconceptions, faulty assumptions, superstitions and sometimes even outright lies.

We need to be sensitive to problems caused by change and have the motivation and courage to sound alarms when a system ascends to a state of entropy. That is what this paper is trying to do, to sound the alarm that many IS departments are starting to enter this state. Many IS departments are:

- Overspending and underproducing
- Overcharging and underachieving
- Overstaffed and underutilised
- Overpaid and underworked
- Oversell and underdeliver

and they need to be overhauled to underpin the business the company they serve is in.

5 Benefits

The major benefit of reducing IS costs and maximising the benefit of IT to the company is that the company may then survive and with it the IS department. IS departments need to relook at themselves, restructure and give the company and the IS employees a new lease of life.

6 Considerations

In short IS departments need to recognise change and understand that change is so rapid that we continuously have to work out new sets of values, beliefs and patterns of behaviour if we wish to survive. It is insane to do something unless the business requires it for some undeniable and important purpose, i.e. for a purpose that is related to the life and therefore survival of the organisation. We must stop making long term plans when we do not even know what we will be doing or needing in the short term.

6.1 Costs

How does one reduce costs whilst maximising the benefit of IT to the company? Step one is probably to understand and control all the costs of IS and IT. One can only reduce costs if one knows what the costs are. Companies need to adopt a rigorous approach towards their IS department's costs, which need to be correctly motivated with benefits, then carefully monitored and reviewed. The question "Did benefits exceed costs?" needs to be answered correctly.

Once we understand where and how the costs originate and how they are made up, one can look at ways of reducing these costs. A huge cost item in any IS department is salaries. Do we need all the IS personnel we have in a department? What is the hell do they all do? Half of them review the strategy the other half produce and condemn it [1]. One could probably cut the number of people in most IS departments by at least 10 to 20 percent with minimal impact to the service they provide. The IS managers have traditionally avoided this issue, as they are humanitarians at heart and have focused on other costs such as hardware procurement and maintenance costs, hence downsizing.

6.2 Downsizing

Downsizing is a term used to describe using smaller, cheaper yet powerful processors to support corporate application requirements. Downsizing may result in the reduction of some ongoing costs such as maintenance and depreciation, and it may in addition reduce one's capital expenditure. On the other hand it may increase costs such as the long-term cost of supporting distributed systems [9]. But cost is not the only reason given for downsizing. Another reason is to decentralise applications away from a central processor to run the same type and more applications on several computers closer to the users. Users also want simple friendly applications as seen on personal computers (PCs), i.e. with menus, graphics, colour, etc. Users want the computer solution to
be complete and exhaustive, the application must arrive with all the functionality needed. Downsizing could also mean less demand for programmers and operators within an IS department and this would in turn reduce overall costs. More and more users are looking at package options, which means that the number of programming staff may be further reduced. Professor P Pirow [6] reviewed about 2000 international Information System case studies and concluded "the most successful information systems used packages, either entirely or as part of a system".

6.3 Client-Server

Client-server may be considered as part of the downsizing concept. There is a growing movement towards client-server architecture. In this architecture a server provides specific services to a group of clients (or workstation computers), meaning that the server can manage a shared resource that all users of an application require. Many companies are implementing client-server architecture or seriously looking at doing so.

The server system can range in size and complexity from very simple file servers, serving small populations of clients to complex large database servers serving very large populations of clients. Some people say that all large, truly multi-user applications should be built as client-server systems. A caveat to client-server is that all the components that make up the environment must be appropriately designed/configured - from the actual design of the applications and database to the cabling of the environment and the network management system.

The beauty of client-server is its ability to mix and match technology. It is perfectly in order to have a midrange machine such as the AS/400 as the database server while mixing workstation and PC technology, running Unix and Disc Operating System (DOS) at the front-end or client.

Let us understand where these client-server systems best fit: In any environment where there is an interactive workflow, that is where there is much interaction between the user via their application and the data, e.g. financial applications. A user request is followed by a response from the system, which is followed by a response from the user, and so on.

The client server architecture raises some concerns in the IS Department such as who runs the client server system?

Because these systems and services are moving closer to the user environment, an almost natural result is that users are running their own systems. The users are taking control.

This in turn means that there is a growing need for adequate training of the user and adequate technical support of the environment. The sort of scenario that could be considered is a help desk support environment run by IS. Inadequate support and training could contribute to a failed downsizing exercise.

Another major concern is a proliferation of technology in the organisation. Is it necessary for each workgroup to choose a different spreadsheet, for example, and how are multiples of everything efficiently and cost effectively supported?

There is no simple answer. Obviously, if the user is paying, the user has the right to choose what the user believes will do the job. It is really important that IS should work with the users to strike a balance between flexibility of choice and standardisation.

6.4 Outsourcing

Outsourcing is another new term bandied about. Outsourcing means turning over or sharing responsibility for all or part of an organisation's IT functions with a third party. Outsourcing covers multiple areas and has been a common practice within the IS industry for many years, for example the use of computer bureaux or hiring contract programmers. Many organisations believed that they should run their own IS departments in order to maintain control, but this opinion has gradually changed as IT has become more complex, more costly and more strategic.

Companies have started to realise that they could achieve significant cost and efficiency benefits from utilising the services of outsourcing organisations. Some of the benefits of outsourcing are:

- The ability of the organisation to concentrate its efforts and expertise on the
core business. More cost effective solutions are realised by virtue of the shared costs.

- Fixed price contracts and realistic escalation increases resulting in more accurate financial forecasting.
- No large incremental increases in expenditure due to the need to upgrade or purchase new hardware.
- No cost as a result of the unavoidable excess capacity that always exists to some extent in an own environment.
- Guaranteed and well understood service level agreements.
- Value for money - long term contracts mean that long term solutions can be provided rather than short term "quick fix" cost savings.
- Access to professional skills and expertise to the benefit of the organisation.

Some companies have outsourced their entire IS operation and the outsourcers have even taken the IS staff. The company must ensure that it knows exactly what it requires from its systems before outsourcing in order to ensure that it gets what it needs.

6.5 Open Systems

There has been an ongoing debate as to the benefits of open systems in the IT industry for many years. Many people do not have a clear definition of exactly what open systems are, never mind the benefits thereof. Openness refers to the ability of systems to communicate freely, it enables information to be accessed and processed at different locations or shared by different systems, different hardware or software platforms. Some perceived benefits of open systems are [3]:

- Lower cost of hardware options and vendor independence.
- Portability of applications to other compatible platforms.
- Flexibility in operating environment options such as databases, communications, security, etc.
- Aligning with the future standard in the IT industry.

I say perceived benefits as I am not sure that true open systems exist. UNIX is not to be confused with open systems, as UNIX is only a base operating system which becomes proprietary as soon as any of the vendors insert their own unique enhancements. There may be an initial cost advantage associated with an open systems solution compared to a proprietary solution, however it is important to also consider the long term costs such as maintenance, skills, integration and other running costs. While UNIX may aid portability from one platform to another, true seamless portability is still a myth. Also the business advantages of portability in the real world are dubious in many situations, for example who would realistically want to port a dated application to an alternative platform? It may be more practical to re-develop, or select a package to take advantage of better business techniques and technologies.

There is a price to be paid for everything, including flexibility. One has to be careful of swapping hardware dependence for that of software dependence. While a proprietary solution may limit some options it may be a safer bet as all the components will integrate, progress at the same rate and be supported by one vendor.

Is Open Systems a future standard? We are still very far away from a point in technology development where all manufacturers will adhere to one operating system environment. One must ask whether this is desirable as there are always "horses for courses".

7 Support

The entire world economy is in a recession. All companies are looking at ways of surviving or staying alive. International Business Machines (IBM) is still recognised as the dominant force in world computing. IBM rated forth in the Fortune 500 in April 1992 [2], with the second computer company rated twenty-sixth. If one looks at some of the things IBM have been doing over the past few years, perhaps it will give us a clue as to what IS Departments should be doing. IBM has cut back heavily on staff over the past five years. IBM has started looking at partnerships and alliances. IBM paid out more than $100 million for equity states in some two hundred computer companies in Europe in the past three years. IBM have also launched entrepreneurial start-up companies whose aim is to do the Research and Development and get new products into the market quickly. Why have IBM changed? Because they want to survive, and in order to survive they have been forced to relook at the ways in which they have traditionally done business. It is time IS departments did the same exercise.
8 Action

The first action we need to take is to recognise that we need to change [5]. We need to change our attitudes and our way of doing business.

IS departments and the people in them need to get a better understanding of the business they serve [4]. People need to specialise in a business area, such as finance, engineering, retail, public utility, education, etc. We need to understand the problems we are trying to solve. In the past we read statements such as "IS needs to get closer to the business". Well, we now need to become part of the business.

IS departments need to understand all their costs to the company down to floor space, telephone calls, stationery used, etc. They also need to be more thorough in the way budgets are prepared. They need to recover their costs by charging the departments who utilise their services. The user departments must be allowed to question these costs and look at alternative suppliers if they so wish.

IS departments need (as part of looking at costs) to look at the people within the IS department. Are they all contributing to the income of the IS department in some way or another? Do the users want or need the services they are providing? Are there services that the users require which the IS department are not or cannot provide.

Most organisations have many stand-alone PC's, who looks after them in terms of backups, security, service, help, etc? Do the users of the stand-alone PC's have any support structure to help them?

IS departments need to analyse all the traditional things we have been doing and where necessary start downsizing them. For example systems development in many companies is becoming a white elephant as more and more packages hit the market. Usually when a company purchases a package, the vendor provides maintenance for the package so the systems maintenance teams need to be re-evaluated. In a centralised mainframe IS department, production does all the job scheduling, day-end runs, printing and distribution thereof, but in a decentralised, client server type architecture the users are taking over and more of these functions.

We need to look at new areas of the business into which IS need to move or smartsize to.

Each IS department needs to look at the particular business requirements of the company they serve, but some ideas may be - Information gathering, systems integration, company performance evaluation, information opportunity seeking, exploiting IT currently installed in the company, IT and application related legislation.

9 Conclusion

IS staff need to act positively and forcefully in order to inspire confidence and elicit participation from all organisation levels, but they need to think tentatively and even defensively in case they are wrong. They must set attainable goals and be committed to the survival of the company which employs them.

I believe that a company which is truly effective in using its IS department will cause the IS department to behave as follows:

- It will not be a comfortable place to work
- Complacency will be a cardinal sin
- Tension will be regarded as a necessity
- The appropriation of the present balance between contradictory needs will be subject to continual probing, ie:
  - Continuity versus change
  - Long term versus short term
  - Centralisation versus decentralisation
  - In-house development versus packages
  - In-house IS department versus outsourcing
  - the list is endless.

The company itself will exhibit great self-awareness, a well articulated sense of what business it is in, how it got where it is, how it behaves and the way to success, all subject to constant assessment.

It will be relentless in its pursuit of excellence, especially in terms of customer satisfaction. It will be comfortable with uncertainty and ambiguity, there is no absolute fixed unchanging truth.

It is a brave person who assumes that because a solution is best or cheapest today, it will still be so in three years time. Downsizing may be cheaper this year, but it is just as likely to be more expensive in two years time. So go back to the basics - treat IT as a business issue, not a technology issue.

Don't stare fixedly into the past as we hurtle pell
mell into the future, don't become dinosaurs. As Arnold Bennett said, "People who live in the past must yield to the people who live in the future".

References

2. (1992), The 500 by Industry, Fortune.
7. Postman N & Weingartner C, Teaching as a Subversive Activity, Penguin Education.