INFORMATION SYSTEMS SEMINAR, CARLTON HOTEL, JOHANNESBURG, 10 JUNE 1981

SHOULD A VICE-CHANCELLOR BE A COMPUTER SCIENTIST?

As I prepared my thoughts to address you this morning it seemed to me that there were three topics of potential interest to this audience on which a person with my background could dwell.

1) Are universities turning out graduates with the right backgrounds (a) to manage companies in which information systems will play an increasingly important role and (b) to drive the information systems effectively?

2) The proper role of the universities in research and development with regard to information systems

3) The effective administrative use of information systems in universities considered as organisations which have as great an obligation to be efficient as businesses.

Obviously each of the above topics is worth a discussion in its own right. The context of this seminar suggests that I devote myself to the third, with particular reference to the six questions which appear on the promotional pamphlet, alongside the rogues' gallery of speakers. In case there are any disappointed listeners, however, I am prepared to answer questions on the first two.

Although Rhodes is amongst the smallest of South African universities (catering to about 3 000 students) it employs nearly 1 000 people and has an annual cash flow of the order

of R20 000 000. In many respects it has the management characteristics of a medium sized business which nevertheless is the most significant economic unit in its immediate environment.

Does such an organisation need a computer for admistrative purposes? I can answer from direct experience that without the effective use of an information system

(a) The financial system, with several hundred transactions per day, was in a state of total disarray. ① Never what had been spent until it was far too la ② Annual financial report as much as 8-9 months late

(b) The personnel function was untidy. Weekly + monthly pay, cash + cheque Now all monthly straight into banks + BS

(c) Customer (i.e. student) records were cumbersomely organised. Still are, I'm afraid, but we are on the point of implementing a database.

Quite clearly therefore an organisation of this size can benefit extensively through the use of information systems; in many cases it could not remain competitive without them. Nowadays it is accepted as a truism that to the traditional four M's of management - men, money, machines and materials - must be added a fifth facet, that of information. What we are concerned with today is the level of commitment the senior executive must make to the management of information.

One can perceive immediately that there are two unacceptable approaches, representing the extreme ends of the spectrum. The executive can make no real commitment at all, dismissing the subject as being of little importance, to be delegated

considered same level of importance as office cleaning or old fashioned accounting machines

to a low-level subordinate. Alternatively, he can become, especially if he is technically inclined, besotted with the implementation details, to the detriment of his general responsibilities as a manager.

I personally had consciously to avoid this temptation - Constant reminder by my wife, astute observer of the scene. Also "Why don't they?"

To my mind the proper executive oversight of the information processing function does not differ greatly in principle from the approach one should take to any other specialist area which is vital to the continued well-being of the organisation for which one is responsible. Most senior executives will have arrived at their current position via some specialist ladder, be it finance, personnel, marketing or production. No executive can ignore any of these important functions; even if he only has a strong background in one of them he must become au fait with the main outline of all of them, insofar as control of them is vital to the business.

There are two fundamental problems with computers. Firstly they are new and therefore not as much is known about them as the more traditional functions. Newness by itself is clearly not an insuperable problem: after all we have come to terms relatively painless with other new technologies such as microfilm techniques and jet travel. It is when newness is combined with insidious pervasiveness that we tend to lose our nerve and take leave of our native scepticism and caution. It seems to be an all or nothing affair with information systems. It would appear that we have to embrace them in toto, with incalculable consequences in the way we do business, or else leave them alone and

Industrial firms are doing it all the time

watch our competitors race ahead with them. We are naturally nervous committing ourselves to machines and a breed of men whose doings we do not really understand.

The key to the right route out of the impasse lies in an anecdote attributed to Harold Macmillan. At his first lecture at Oxford his professor is alleged to have said: "Whatever you learn in this course will be of no conceivable direct use to you in any occupation you choose to follow. By the end of the course you will, however, have learnt one thing: you will be able to tell when somebody is talking rot".

A fairly good description of one of the most important facets of a Univ. educ. After all we get plenty of practice at it.

I am in the fortunate position of knowing something about computers, and therefore I can usually tell whether what is being proposed makes sense or not. Nonetheless, and I am sure every executive here present can mirror this in his own experience, I have been called upon to make important decisions in such arcane areas as electron microscopy, TV studios, ichthyology, limnology and leather research. Quite obviously I knew no more about these subjects or the equipment employed than any other intelligent layman, and so expert advice was necessary. It should be a matter of no surprise for any experienced executive that the issues are essentially no different from those involving the installation of an information system. There is one infallible litmus test. If you cannot understand what the specialist is trying to tell you it is not because you are too stupid. It is because he is talking nonsense.

In fact I tend to do quite a bit of the preparing myself

Some of these very words I did not even know the meaning of

What are we trying to achieve
Is it worthwhile
What equipment is available at what price, from whom.
Reputation of suppliers
What are other users doing.
Are their forms comparable
staff requirements - outside consultants.
Maintenance
Site preparation

However,

Above all, a correct assessment of the people on whom you are going to have to rely. Of course

The most important consideration in dealing with information systems is never to allow one's self to be panicked out of normal management criteria. Particular care and probing is required with regard to deadlines and budgetting. Computer people tend to be unrealistic optimists and more proposals have suffered shipwreck through lack of management firmness in these two key areas than most organisations will care to admit.

There is no need to pioneer unless it is absolutely unavoidable or success is self-evident. Why invent the wheel if somebody else has already done so?

Use your usual discretion concerning the suppliers' technical and financial strength. Do not be afraid of gradualism or pilot programmes. It is sheer folly to attempt to come to terms with the ultimate system in "one giant step for mankind". Be content for your system to evolve through Mark I, Mark II, all the way up to Mark N if necessary. We should by now be fully inoculated against believing in one grandiose Totally Integrated Management Information System which will deal with technical calculations, accounting, office automation, and word processing, not to mention controlling the PABX and electricity demand. It may even be technically feasible, but is it really necessary or wise to commit so many important functions to one single device?

Correct technological choices are patently of paramount importance in the information field, but far more important

are the human factors which come into play when a person's work environment is to be altered drastically. Machiavelli observed that the introduction of change is always fraught with perils, since those seeing themselves as benefitting are lukewarm in support because the benefits are percieved as uncertain. On the other hand those who stand to be adversely affected oppose it vehemently since their relative disadvantage is certain. A great deal of management attention to the human factors is even more important that the technical considerations. Everybody concerned must be carefully briefed as to how the system to be introduced will affect him and what is expected of him. Failure to do so will inevitably result in obstruction and sabotage, all the more insidious because of its being at those subtle levels below the threshold of conscious action.

R.C. factor
status factor
fear of job impoverishment. who wants to sit all day in front of what amounts to a TV screen.
Do we think enough about these things?

Let me now direct myself specifically to the issues raised in the prospectus for this seminar:

1) To what extent should, or can, the senior executive become involved with information systems? If, as is still somewhat rare today, he has been brought up with them he will continue to take great interest in them, but he must discipline himself not to interfere too directly in their detailed running. If he has no immediate background it is essential for him to understand the broad outline of what can or cannot be achieved, and at what level of resource commitment. Information systems are an essential component of how we do business, and we must be able to "read" them with the

same level of understanding as for example a non-accounting chief executive must comprehend a balance sheet.

2) What type of personal commitment should be made? The answer is straightforward: sufficient to ensure that you are exercising your proper function as a manager, and that you have not by default abdicated your responsibilty to the technicians.

3) How meaningful is the communication between top management and information system personnel? In my own case I have to answer that the communication channels are open and direct. If this in general is not the case the communication, even if virtually nonexistent, is still very meaningful in a negative sense because it will result in bad decisions and ghastly mistakes. Information systems personnel must have the ear of a highly placed senior executive if the systems are to have any solid beneficial impact at all.

4) What level of technical expertise is required by the executive? I submit that in general a surprisingly small amount is essential. No executive should accept serious ultimate responsibility in a high technology area without absorbing the general background at for example the level of a comprehensive Scientific American article. Im my own case I have to make responsible decisions affecting some forty specialised academic disciplines and six research institutes. It is impossible

to have competent knowledge in more than one or two, yet every Vice-Changellor must absorb enough of the background to understand what the issues are.

5) How important are information systems to the organisation's business planning? They are important to the extent that they marshall information and manipulate models in an efficient and convenient manner, but no system can do the planning. The more strategic, and less tactical, the planning the smaller the role the system can play. The processes that a senior executive goes through, especially in long-range goal-setting, are so complex and varied that I doubt that they will ever be amenable to precise description in algorithmic form, without which one cannot reduce them to computer programmes.

Give real problem as example

6) Should senior executives review and evaluate the cost justification of information system projects? It was something of a surprise to me that this was one of the questions posed. This executive funtion is vital. It is in fact the single most important contribution he can make to the adoption of a meaningful and effective information system. Searching and probing questions can and must be formulated before any commitment is entered into, otherwise one will find one's self riding a tiger. One can no more take an architect's word for what a building will cost than accept uncritically the computer expert's view of what his system installation will cost. Ask all the hard and unpopular questions

I've learnt the hard way here too.

about budgets and deadlines and insist on precise, quantifiable answers. Add a fat percentage to the most pessimistic estimates and if that scares you then say "no" loudly and emphatically.

Finally let me proffer my response to the question with which I titled my address. "Should a Vice-Chancellor be a Computer Scientist?" The answer is clearly "No, but it does help".

Before I answer tell the Maurice Roberts joke. (3 or 4 years ago) that was how I was perceived by some. Now that I have mellowed after 5½ yrs experience that kind of joke has disappeared

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