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DEVELOPING INFORMATION SYSTEMS STRATEGIES
- A MODEL

Notes

A. CAUSES OF IS STRATEGIC PLANNING

Based on a sample analysis there appear to be three main reasons why an IS strategy is developed:

- reaching the ‘transition point’ in the stages of growth when the strategic role of IS is recognised;
- major corporate changes or actions require the IS role to be reconsidered;
- competitive threats or opportunities involve IS/IT commitments in direct business action.

In many cases more than one of these causes may coincide. Each cause implies different objectives, scope and emphasis for the strategy.

i. Due to IS Evolution

The changing role is usually perceived by (some) users and IS management due to the changing nature of demands often in line with Nolan’s stage 3 to 4 changes of emphasis.

Since this appears to be the most common reason for the need to develop an IT/IS strategy it is worth considering the nature of the transition further.

In spite of criticism of Nolan’s six stages (Re’s 2 & 3) the transition point between the organisation’s perception of managing computers to managing information still appears a very valid observation. This is shown on figure 1. Most organisations, or major parts of those organisations, are lower down the curve in practice than in their visions, and consequently results delivered are generally disappointing.
The transition required is often the biggest step in the management of IT/IS since the first computer was installed. In essence, it is a fundamental change in how IT/IS resources are to be managed. It can be summarised as a change from 'Computer Management' to 'Information Management'. This is as significant a change for Marketing Management, Labour to Human Resource Management, etc. The relationships involved and the transition required is depicted in figure 2.
TRANSITION OF THE 1980s

I.S. role in the enterprise

Relationship with other departments

Managing the I.S. department

Managing the activities

COMPUTER (DP) MANAGEMENT

INFORMATION MANAGEMENT

During the early stages of computerisation the pre-occupation is with managing the activities - operations, systems projects, etc. - successfully. In time an organisation is established which can cope with the applications throughout their life and the changing technology. Whilst this has been evolving, relationships with users will have developed: the effectiveness of the interface being dependent on success to date and the users’ knowledge of the way computers can be used - often Accounting will be far more advanced than (say) Marketing - not for good business reasons, but due to the ease with which computers can be applied. Occasionally, the role of IS/IT in the organisation may be considered but the haphazard evolution and current problems will prevent an overall picture to be clearly seen.
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Up to this point the driving force has been managing computer resources with effort applied in proportion to the technical and application difficulties, without much regard for the value to the business of the applications.

The transition requires a top down approach, defining how IT/IS and the business are related, then how each department/function of the business can benefit from IT/IS and only then organising the IS resources accordingly within which activities can be carried out.

Whilst the IT/IS department has become more sophisticated, so have the users. Their attitude to the 'purchasing' of information services will have evolved (see figure 3).

**USER EVOLUTION**

```
CUSTOMER
   ↓
CLIENT
   ↓
CONSUMER
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Figure 3

Initial attempts to get users to be customers - to specify requirements and then wait for delivery - prove unsatisfactory. The next stage is client - on-going interaction and review during the development of applications. This delivers better results but is very intensive in resource use - both user and professional and requires continuous good communication in both directions. As users become more sophisticated they can specify and satisfy their own information systems needs in some areas, and they would prefer not to justify or explain what they require! They want the discretion of a consumer, to choose how they use IT/IS.

Thus the 'evolution' cause is quite complex and has many detailed causes which combine to produce a desire to manage IS/IT resources in new ways. The triggers could be, for example:

- some users recognise that IS has a strategic or competitive value and capability;
- demand increases generally, requiring significant budget increases - need to integrate technologies - set priorities and improve productivity of IS resources;
- users are dissatisfied with service;
- IS is hamstrung due to resource, technology constraints.

It is evolution, not revolution!

The emphasis of the strategy will be to release the technology to the users whilst ensuring management control is maintained and resources are not wasted.

The scope will be to extend the boundaries of IS use, but only to meet 'known' requirements.

The objectives of developing the strategy will be to obtain corporate management understanding and commitment to the revised demand for resources. This means that users and IS will have to show how this can be achieved by 'controlled evolution'.

Most IS strategies have this as (at least part of) the cause. Some users/functions/units in the organisation may be more retarded in IS uses, and to be effective it may be best not to produce a 'total strategy' for everything.

ii. Due to Major Corporate Changes

These might be:
- new owners/management due to takeover, etc;
- major rationalisation programmes for the organisation;
- major organisational restructuring, eg. to profit centres or strategic business units;
- a major corporate planning thrust;
- new products or markets, or major new facilities;
- or possibly due to general user dissatisfaction with the contribution from IS

This will have senior management commitment! The emphasis will be on changing the role of IS in the organisation - the strategy should define the new role. Therefore, initially at least, the scope and objectives may be uncertain!

If major changes are occurring in the corporation at the same time, users may not be capable of defining what is required of IS.

Often the resulting strategy, produced under organisational stress, is not entirely appropriate.
iii. Due to External Pressures

These might be:
- competitive threats (real or potential) based on IS/IT;
- opportunities for IS/IT to be used to gain a competitive advantage;
- new potential products or markets created by IS/IT;
- major cost factor changes producing an urgent need to improve productivity or lose business.

A strategy is required because these new requirements will require resources to be committed long term - which will probably require resources to be moved from elsewhere. Alternatively, or additionally, new technology may be required which needs to be considered in relation to existing technologies.

The emphases of the strategy will be exploitive/entrepreneurial and this implies new attitudes to the use of IS/IT and, probably, in turn new skills, different people and new types of technology to support.

The scope may be limited and focussed on one area of the business. General (senior) management may not be involved, although senior line management in the area concerned may be very involved. It should not be the excuse for an overall review of IS strategy, which will inevitably delay progress.

IN SUMMARY

Where the main cause is IS evolution, the emphasis will be to maintain control. If the strategy is demanded to satisfy major corporate changes the objective will be to alter the IS role - although to what may not be entirely clear. If external pressures are the cause, it is likely the objective will be to exploit IS in new ways in a limited area of the business - but this will require redeployment of resources.

It is important to know what the strategy is intended to achieve - its objectives.
B. NEEDS FOR AN IS STRATEGY

In general, the needs to be satisfied in developing an IS strategy will be some of the following:

- coping with increasing uncertainty, differentiating what is important for and relevant to the business;
- establishing a framework within which changes can be introduced and managed effectively as IS/IT is used more widely;
- obtaining executive management commitment to the role of IS in the business, and a consistent management stance;
- completion of a corporate strategy and revisions where IS/IT affects it;
- obtaining better returns from existing investments in technology and resources - this can often be overlooked, but generally offers considerable scope for improvement;
- establishing a framework within which investments can be evaluated and technologies adopted.

In general, there will be a need to adopt a formulative rather than reactive approach to IS and quite often to stop IS being a battleground, or seen as a constraint to business development.
C. KEY OBJECTIVES OF AN IS STRATEGY

Whilst a strategy will have particular objectives to meet, there will be underlying general objectives in both the user and IS areas. These may not be the same, given the history and existing role of IS in the organisation. However, they should be compatible - as below:

<table>
<thead>
<tr>
<th>User Objectives</th>
<th>IS. Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>To interpret business strategy</td>
<td>To identify opportunities for exploiting IS/IT capability.</td>
</tr>
<tr>
<td>and needs in terms of IS developments and services.</td>
<td>To identify and plan for resources &amp; technologies required.</td>
</tr>
<tr>
<td>To establish demand and priorities for IS activity.</td>
<td>To reconcile requirements and ability to satisfy them.</td>
</tr>
<tr>
<td>To reconcile user requirements and avoid duplicated or incompatible investments.</td>
<td>To provide service levels appropriate to business needs.</td>
</tr>
<tr>
<td>To get the best values from IS resources.</td>
<td>To enable users to learn from the experience available in the IS specialists.</td>
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<tr>
<td>To regain control of their information and exploit it to improve performance.</td>
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D. IS STRATEGY INPUTS AND OUTPUTS

The process of developing an IS strategy will be interactive and continuous but, like any information based process, can be described as a set of inputs to be analysed using appropriate tools and techniques to produce a set of appropriately structured outputs.

The 'model' outlined below is one alternative (Figure 4).

![Diagram of IS Strategy Inputs and Outputs](image)

**Figure 4**
The inputs, their importance and inter-relationships, the planning tools and methods available and their use and the contents of the proposed outputs are detailed later in the course.

At this stage it is sufficient to define them.

Inputs

1. **Current Application Portfolio** - existing systems plus in progress developments and planned projects. Not the backlog, i.e. unscheduled applications (see 6).

2. **Corporate Plans and Objectives** - at all and any levels (functional or unit) they are available even if not formally documented as a 'corporate strategy'.

3. **Business Environment** - the economic, industry, competitive climate in which the organisation operates.

4. **Social Environment** - the human factors, individual or organised, internal, i.e. employees and external (consumers, pressure groups) and the political climate.

5. **IT/IS Trends** - the technology, its economics and its current and potential applications in the firm's environment.

6. **Functional Business Needs** - business activities which might be beneficially addressed by using IS/IT in the foreseeable future.

7. **Available Resources and Capability** - both quantity and quality of resources available throughout the organisation to be matched against the requirements of the strategy.

**PLANNING PROCESS**

The mixture of strategic planning and IS management and planning techniques available.

Outputs

1. **The Strategies**

   (a) **Business IS Strategy** - how each unit or function will deploy IS/IT in achieving its business objectives - essentially the applications and services required.

   (b) **Management Strategy** - the common elements of the strategy which apply throughout the organisation, ensuring consistent policies where needed.
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(c) *IS Functional (Technical) Strategy* - policies for the management of technology and specialist resources.

The strategies are a means to an end.

2. *Application Plan* - specific 'projects' whose cumulative objectives satisfy the strategies and against which resources will be allocated.

3. *Future Applications Portfolio* - This is the most important output since it is a picture of how IS/IT will be used, at some future date, to help manage the business towards achieving its objectives.
E. IS STRATEGY - THE PROCESSES

The processes outlined below are not peculiar to the development and implementation of IS strategies - they are applicable to any strategic management process. The process is interactive, especially in the later steps (Figure 5).

The process steps are applicable to producing an overall strategy or considering specific areas of the business or applications of technology.

Figure 5
REFERENCES

1. Nolan 'Managing The Crises In DP' (HBR March/April 1979)

2. Sullivan 'Systems Planning In The Information Age' (SMR Winter 1985)

3. Drury 'An Empirical Assessment Of The Stages Of DP Growth' (MIS Quarterly June 1983)