Information-Strategies
«Future Directions»*

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T HE theme of this keynote presentation to the INFOCITE 1992 Conference is Information — Strategic Directions.

This paper sets out a framework within which Information professionals might subsequently consider and discuss:

- the nature of the information;
- how it has been used in the past;
- how it might be planned for and used in the future;
- the impact of information in society;
- the issues its use might raise and

- some thoughts on the changing role of information professionals.

The nature of information

Let us consider firstly what is meant by information.

A simple definition might be «those facts, thoughts, ideas and feelings that human beings exchange as part of the process of living».

But what form do they take? A smile or a laugh can convey as much meaning as a set of numbers of words written on a piece of paper. Yet when we, as information professionals, think about information we tend to talk about facts and figures. Why should this be? Is it simply that we find «formal» information — express as data, test

or image — easier to quantify and classify?

Information is the lifeblood of organisations; yet in many as little as 5% of their information is supported by formal information systems or information technology. Should we be concerned? Do we need to look more closely at whether there is a need to address the remaining 95% and what could we do to capitalise on this untapped resource?

If only 5% of «formal» information has been addressed, do we also need to look at «informal» information — often characterised by voice and image? Do we understand the nature of this information and how it is used? Do we have the techniques for analysing this «soft» material?

There is no simple answer to these questions. Information is an intangible; a concept to the human mind, yet without it human society would be unlikely to exist in its present form if at all.

Information is not a new concept. Yet, surprisingly, its significance is only now beginning to be appreciated and effort directed to its study.

Why this should be so? Information has been an integral part of the development of the human species; yet it is only comparatively recently that support to information collection, storage, processing and distribution has been developed. The first real information technology — the art of writing on paper — dates back to 3000 BC. Another 1500 years

elapsed before the arrival of the printing press (1500 AD), Technology to support information in voice form — the telephone — only arrived in the late 19th century whilst the modern computer has only been available in an affordable form for the last 30 years.

As societies have moved from being based on hunting for food, through the development of agriculture to industrialisation, the form and nature of those societies have become ever more complex and inter-related. Information has been the «oil in the engine» and the «glue which has kept the fabric of society together».

In the 19th century, the Scottish economist — Adam Smith — developed the concept of «*economic resources*» which he defined as capital, material and labour.

In the industrialised societies of the late 20th century, information is rapidly becoming the fourth economic resource. Without information and the effective management and utilisation of information, organisations whether in the public or private sector, are unlikely to prosper and may even face «going out of business».

But information *per se*, like capital, material and labour, is of little value unless marshalled in support of aims and objectives. Information is expensive to collect, maintain and disseminate and unlike the other economic resources can become out-

of-date very rapidly. Information and its use are highly dynamic, changing in moments rather than days, weeks or years.

As well as concerning ourselves with the nature of information, we need to consider how information can be harnessed. The key to resolving this problem are Information Systems (IS).

Information Systems and Technology

Until the late 1980s Information Systems (IS) were often thought of primarily in Informatiom Technology (IT) terms. Concern centred around the hardware of computers, telephones, telegraph, radio, television and the other technologies which supported the processing and transmission of information. That view is changing.

The late 1980s and early 1990s are seeing a shift from this somewhat narrow focus to a realisation that successful exploitation of information is only achieved through recognising the wider aspects — people, organisation strctures and cultures, etc. — as well as the underpinning information technology (IT). Information Systems (IS) encompass all of these.

The challenge for information professionals is how they will extend their thinking beyond that of purely the technology or the structure of data and how the interrelationships between the various aspects of information systems can be managed.

Other disciplines need to be involved — psychology, sociology organisational theory, economics, etc. and a new approach adopted — a «holistic» multi-disciplinary approach.

Yet, invariably in most organisations, the planning and provision of IS is left to the technology «professionals». If we are to exploit information as a 4th economic resource, then a more wide ranging and strategic approach to IS planning and delivery is essential.

This is particularly so in the case of IS. Just as our societies regard the planning and management of finance and people as highly significant, so we need to treat IS in the same way. Information Systems:

- affect most or all of the organisation;
- have a long timeframe;
- involve substantial resource and
- have the potential to change fundamentally the organisation's direction and impact on its clients.

Strategic Planning for Information Systems

What is a strategic approach? *«Strategy» is the art of the general —*

long term view as seen by those command. It is a broad view and is more concerned with planning of the organisation as a whole than planning the whole organisation.

A «strategy» provides a framework for achieving an overall goal or goals, within which detailed plans and actions can be seen and actioned in context. Information Systems require long term planning to match the long term investment necessary if we are to efficiently and effectively exploit information as a resource.

To plan strategically for IS, we need to:

- understand the aims and objectives of the business;
- Establish the information and process requirements of the business;
- outline the systems to provide the information;
- determine the role of technology to support the information systems;
- agree policies and plans to develop and implement the information systems;
- determine the role and use of resources to achieve the information systems required;
- manage, review and evolve the strategy.

The process requires «vision» and strategic leadership — leadership from the top. Not only do top managers need to be committed to

the process but also need to be deeply involved. Information Systems have the potential to provide new opportunities; streamline procedures; increase the effectiveness of management and radically alter the way things are done. Top managers must be aware of the possibilities and the impacts.

Public Sector Perspective

Information and Public Administration

Within industrialised societies, Governments are the prime users ans creators of information. In the period since the end of the 2nd World War, the role of Government organisations in societies has increased dramatically with more legislation and involvement by the state in providing for its citizens.

The rapid economic development of that period together with a greater recognition of the needs of the individual citizen has led to increasingly complex societies which could only be successfully supported and managed by greater Government use of ever increasing amounts of information.

Throughout the 1960s, 1970s and even into the 1980s Governments turned to the emerging information technologies such as computers and communications to reduce the administrative burden and rapidly rising costs of employing the large

numbers of clerical «factory» workers necessary to collect, store, process and disseminate the rising volumes of information. In conjunction with internal desires to keep procedures from being overloaded, government departments in the UK came under political pressures.

Pressures on Public Administration —
Triggers for Change

In the mid-1970s external pressure was exerted on the then Labour government by the International Monetary Fund (IMF) to reduce the size of UK public expenditure. This led to the introduction of a system of Cash Limits for spending in the public administration which had been described as «out of control».

In 1979 the incoming Conservative government reinforced the policy of strict controls on government spending with a firm commitment to reducing government manpower levels as well. It also set up a series of efficiency reviews of parts of the administration, known as the Rayner scrutinies.

Automation
in the Public Administration

Replacing people with machines, as in the industrial revolution for manufacturing, became the «fashionable» as well as the «political» thing

to do. Substituting IT into existing manual procedures for performing tasks was seen as the solution to both the internal and external pressures and became the accepetd way of doing things, even though in many cases this led to over complex and ultimately expensive solutions. The «paper factory» was being automated.

Today in the 1990s, that legacy still remains with us in Government administrations at all levels — national, regional, local and public utilities. At the end of the 1980s, UK central government expenditure on administrative (*i.e.* non-military and non-scientific) IT applications was running at approximately £2 billion pound per annum or roughly 12-15% of the rumming costs of central government administration and increasing year on year.

Certainly the drive for economy and efficiency which this use of IT supports continues but in the late 1980s in UK government, new pressures and challenges have arisen.

New Triggers for Change

Within the UK government administration, Departments traditionally have seen themselves as administrators or policy advisors. Their work was often seen to be «in support of the Minister».

The concept of being in business and having customers and stake-

holders towards whom the activities of the organisation should be focused and who might require some form of product or service was not widely recognised.

A series of further «politically» inspired initiatives to modernise the public administration began to be introduced throughout the 1980s. The impact of these were:

a) decentralisation of manege-ment within the administration both in terms of levels of decision making and geo-graphically from London out to the regions;

b) devolution of budget manage-ment and accountability to an appropriate level of manage-ment;

c) The setting up of «Executive Agencies» — discrete business units focused, under the direction of a Chief Executive, on the provision of particular services, such as the admi-nistration of the social security payments system or the admi-nistration of driver and vehicle licensing;

d) pressure to focus more clearly on the needs of the indivi-dual citizen — the «Citizens Charter» — or in business terms — «the customer».

These initiatives signalled the increase not only in the pace but also the very scope of changes.

Future Strategic Directions

UK Public Administration is undergoing the most radical change for 150 years. These politically inspired initiatives have not simply focused on the internal organisation and operation of the public admi-nistration. From an initialand on-going «inward» focus, they have broadened to address rising concerns and expectations about the improved delivery and quality of public ser-vices — an «outwards» focus.

Public Administration in most western European countries has developed over many decades. It has evolved to cope with the challenges and problems of the day, albeit sometimes rather slowly.
The environment of the 1990s is more turbulent and rapidly changing than that which public administration have had to operate within in the past. The technological developments in the field of information have moved at a pace much greater than our ability to harness them. Our awareness of the opportu-ties they offer and the possible impacts have not kept pace.

For example, the new Executive Agencies are being set strict per-formance targets. Public service rates of pay are performance-related.

Penalties for «poor service» are being imposed. «Quality of Service» are now watch words being used in relation to government business just as much as they are in the private or commercial sector.

This shift in climate, culture and structure is not unique to the UK. The OECD describes evidence of such changes amongst many of its member countries in that they share a degree of common understanding of the problems and are all following similar broad directions. In Portugal, the Secretariat for the Modernisation of the Public Administration (SMA) is facilitating the changes which all public administrations must make if they are to remain responsive to the needs of the citizen.

In a recent paper published by the OECD recognition of the extent of the impact on a national economy by public administration is clearly stated, viz:

> «Competitiveness of a national economy depends on more than the private sector alone. Because of the way it affects costs of private sector production, the public sector is a significant factor in international economic competitiveness; all the more so in the context of the globalisation of markets and the increased mobility of capital. The fact that national public sectors can contribute to, or undermine, international competitiveness may be a powerful

argument for would-be reformers of the public sector, including business lobby groups, to press for change. International comparisons of public sector performance may strengthen their arguments and clarify how the public sector affects competitiveness.»

Information — Opportunities for Society

This shift in approach opens wide ranging opportunities for «benefits to society».

The very essence and nature of public administration is that of «service to the citizen». Yet, the last 30 years have tended to be characterised by political policies and initiatives which have focused somewhat narrowly on enhancing the economic well being of citizens.

Whilst that aim still continues, there is a growing recognition that other aspects of citizen's lives can also be enriched and in particular those which can benefit both directly and indirectly from information and the process of «informatisation».

«Informatisation»
in Public Administration

The structure of most public administrations and indeed many

parts of the private or commercial sector reflects the way in which work is organised for the administrative and managerial convenience of the organisation itself.

The citizen has a different perspective. Public administration exists to support the citizen. The citizen is the major stakeholder and customer of the public administration. Yet, surprisingly until only recently, that perspective has not been apparent to many public administrators. There are many opportunities to resolve the past.

If we put ourselves in the citizen's shoes, we can see a whole range of ways in which information, information systems and information technology can be harnessed for the benefit of the citizen.

For example:

«The Citizen Empowered»

The citizen could be given direct access to government information form their homes or from public access points such as libraries, post offices or shops. The vast amounts of legislation created every year by Governments would be accessible and perhaps even more understandable. Citizens would have the opportunity to know

- what they were entitled to in terms of support (financial and other);

- what they were required to do by law (road safety requirements);
- what they should pay in terms of taxes;
- what jobs were available throughout the country (employment opportunities) etc.

The possibilities are limitless. It would be possible for the citizen to conduct simple transactions with the public administration through a terminal like a bank cash machine. Services could be made available 24 hours a day, seven days a week. The effect would be to put the citizen in control.

«One Stop Shopping for Government Services»

The citizen is not particularly aware of, or concerned about, the department or agency with which he or she must conduct a transaction. In today's society, the citizen may have to visit several different departments and buildings (often remotely located from one another) if he or she wishes to conduct business.

The concept of the «one stop shop» brings together the «front doors» of departments into one office located in shopping centres across the country.

Government staff supported by IS could assist the «customer» in

dealing with a whole range of business matters.

Expert systems would help the citizen to interpret legal provisions to their own particular set of circumstances and with new technologies such as touch screens those with lower language or education levels could assist themselves.

Nor need the services be restricted to central or national governments services. Regional and local government affairs could be dealt with as part of the «one stop shop» package.

The distance many citizens see between Government and themselves could be substantially reduced.

«Providing for Special Needs»

Today there is a wider recognition that societies comprise many different groups and individuals who have special needs, whether they result from disabilities (physical and mental), low incomes, low levels of intelligence or education.

«Informatisation» offers the possibility of viewing the information stock from the perspective of those groups and enabling access to that information in a co-ordinated and integrated way.

«Co-ordinated Information Use»

Governments tend to create processes and boundaries around information collection, storage and use which relate to the physical organisations of Government rather than the logical flows or relationships between information categories.

Typically, Ministry or Department «X» will administer its administrative jurisdiction almost without regard to the fact that Ministry or Department «X» uses similar information. When societies' were relatively simple and the volume of information was low, this did not create a major problem.

However, in today's complex societies and with rising expectations by citizens, this presumption no longer holds true.

Let us consider the opportunities in the area of geographic information as a case in point:

The emergence of maps on digital databases provides the opportunity for information about land use to be co-ordinated between government agencies and made available as an integrated set.

As a citizen, we would be able to look at «Vimeiro» or «Évora» and be able to know:

- what the climatic conditions are during the year;
- what is the population; how does it break down;
- what industry is there;
- what is its history and present cultural activities;
- what are the characteristics of the terrain;

The opportunities and benefits are largely limited by our imagination and the will to make it happen.

The future strategic direction for Information professionals must involve:

- **a shift in focus from looking inside organisations to looking outside the organisation.**
- **raising levels of interest from operational and tactical to strategic.**
- **adopting a more «holistic» approach to the value and use of information.**
- **becoming proactive rather than reactive-shifting from problem solving to identifying opportunities and achieving goals; taking a strategic view.**
- **developing a «partnership» approach/enhancing credibilioty with the business community.**
- **raising the awareness of politicians and top managers.**

«Improving the quality of public policy»

Policy formulation by governments has always been a somewhat imprecise science. Given the nature of the problems governments must address, especially in a rapidly changing and shrinking world, it is hardly surprising that time does not allow for large amounts of information to be taken into the process of formulating policy.

IS offer the opportunity to do this. Integrating and co-ordinating the vast pools of information held by governments and those in the private sector could provide valuable clues to the real issues and through sophisticated modelling techniques the impact of policy options could be better assessed.

Governments spend a great deal of time correcting policy directions after they have been implemented. The effort involved can be costly, embarrassing to governments and detrimental to citizens. Monotoring, tuning and reviewing the impact of policies can be greatly facilitated through IS.

«Citizen input to decision making»

IS of the future may well enable Governments to consult citizens on a national, regional and local level about their views on policy choices.

TV talent shows today involve studio audience participation in the decision making process by enabling each individual member of the audience to vote. In the future, this principle could well be raised to a national level, providing the basic

technological infrastructure is put in place.

«Other opportunities»

Space and time does note permit further discussion of opportunities, but the following list of candidate areas may provide a useful point for you, the reader, to consider:

> «Getting help from Government»
> «Deciding our own future»
> «Enriching our knowledge»
> «Choosing where to live»
> «Enriching democracy»
> «Sharing in decision making process»
> «New ways of working / new types of employment»

The critical questions we need to ask ourselves in the field of public administration are

> «What better things can we do?» and
> «How can we do them better?»

At the heart of meeting those challenges for the future is Information and Information Systems. But, whether they will be fully exploited will depend on how we seek to deploy them.

However, we must not lose sight also of the issues and challenges that these opportunities will bring with them. In a bureaucratic society, a major issue will surely be the future strategic direction for organisations as we currently know them.

Organisations — Future Strategic Directions

The developing «information society» will require new forms of organisation if it is to exploit the benefits of information and information systems.

Organisations will need to change the way they operate. Today's organisations have a number of features which will have to change.

Goals and values which are often diffuse or even concealed in today's organisations will become more explicit and understood not only by those within the organisation but also those outside (*e.g.* shareholders and customers). Those goals and values will also be shared, enabling the members of the organisation to focus their efforts to a common purpose and in the same direction.

Managers will move from identifying and solving problems to a situation where their efforts are directed at achieving goals — a «proactive» rather than «reactive» approach. Current forms of structure — largely hierarchical, where specific responsabilities and tasks are allocated to individual organisational units — will move towards a

situation where people work in teams aligned to business processes. The internal shape of the organisation will be constantly changing as the skills and expertise of the staff are regrouped to achieve new goals and objectives.

This will require a significant shift in managerial styles and roles. Rather than being supervisors responsible for discrete organisational groups with a heavy emphasis on managing work and finance, many middle managers will change their focus to developing the skills and abilities of individual people within the organisation — a counselling role. Managers will focus on total quality management; concern will focus on ensuring speedy responses and learning from mistakes.

The levels of management within the organisation will reduce from the 7-10 we have currently to perhaps only 3 or 4. The rewards currently offered of being able to «climb the ladder» into more «senior» positions according to a well defined hierarchy, where position on the ladder indicates value to the organisation, will change. People will be valued for their knowledge and the contribution they make in this area. They will work in teams where contribution to the team results is the critical assessment criteria. Achieving future goals will require a wider range of skills and expertise than most organisations

and their people are likely to possess. Expertise will be brought in from outside and people may begin to work on a part-time basis for a number of organisations.

The emphasis on «automation» of repetitive clerical tasks — characteristic of the period from 1950 to the late 1980s — will change. Informating the organisation — providing knowledge workers with access to a wide range of information from both within and outside the organisation — will be the major emphasis in the future.

The boundaries of today's organisation which are similar to the walls of a castle built to keep out adversaries and enemies will gradually crumble. Organisations will develop mutual understandings of their relative aspirations leading to closer alliance in a spirit of mutual co-operation and support. Information will flow easily across boundaries and will become more and more shared.

The trends towards this «vision» of organisations in the year 2000 and beyond are already evident. Politically within Western Europe and increasingly the wider Europe including Eastern European states, there is increasing co-operation and mutual dependence and sharing. Information and Information Systems will speed that process.

Within European public administrations more involvement of private

sector expertise is occurring. There are many more partnerships between public administration and between the private and public sector. The boundaries are becoming «fuzzier».

Implications for the Nature of Public Administration

Public Administration in most western European countries has developed over many decades. It has evolved to cope with the challenges and problems of the day, albeit sometimes rather slowly.

The environment of the 1990s is more turbulent and rapidly changing than that which public administration have had to operate within in the past. The technological developments in the field of information have moved at a pace much greater than our ability to harness them. Our awareness of the opportunities they offer and the possible impacts have not kept pace.

Traditional conventions on how finance, people and capital assets are regarded and managed will need to change if we are to exploit the real benefits of information. The changes imply changes in attitudes and beliefs, not only amongst the technologists but also the business managers, politicians and even amongst citizens in our societies. Changing «mind sets» is not an easy task and neither will it happen overnight.

Existing conventions need to be challenged and evolved to match the opportunities offered by IS.

The ways in which we work within the public administration and how we are organised will need to change. As information professionals we have a significant role to play in meeting the challenges and exploiting the opportunities. To do this we need to initiate an informed, balanced and forward looking debate covering all the policy and societal issues.

A more flexible approach is required.

Impact for Information Professionals

The future strategic direction for Information professionals must involve:

- a shift in focus from looking inside organisations to looking outside the organisation.
- raising levels of interest from operational and tactical to strategic.
- adopting a more «holistic» approach to the value and use of information.
- becoming proactive rather than reactive-shifting from problem solving to identifying opportunities and achieving goals; taking a strategic view.
- developing a «partnership» approach/enhancing credibi-

lity with the business community.

- raising the awareness of politicians and top managers.

Concluding remarks

The aim of this paper has been do paint a «vision» of what might be.

Opportunities have been identified and some issues raised.

The challenge for information professionals and others is to address how that or other visions might be achieved and the implications of so doing.

This paper is merely the prologue. Act 1, Scene 2 can now commence.