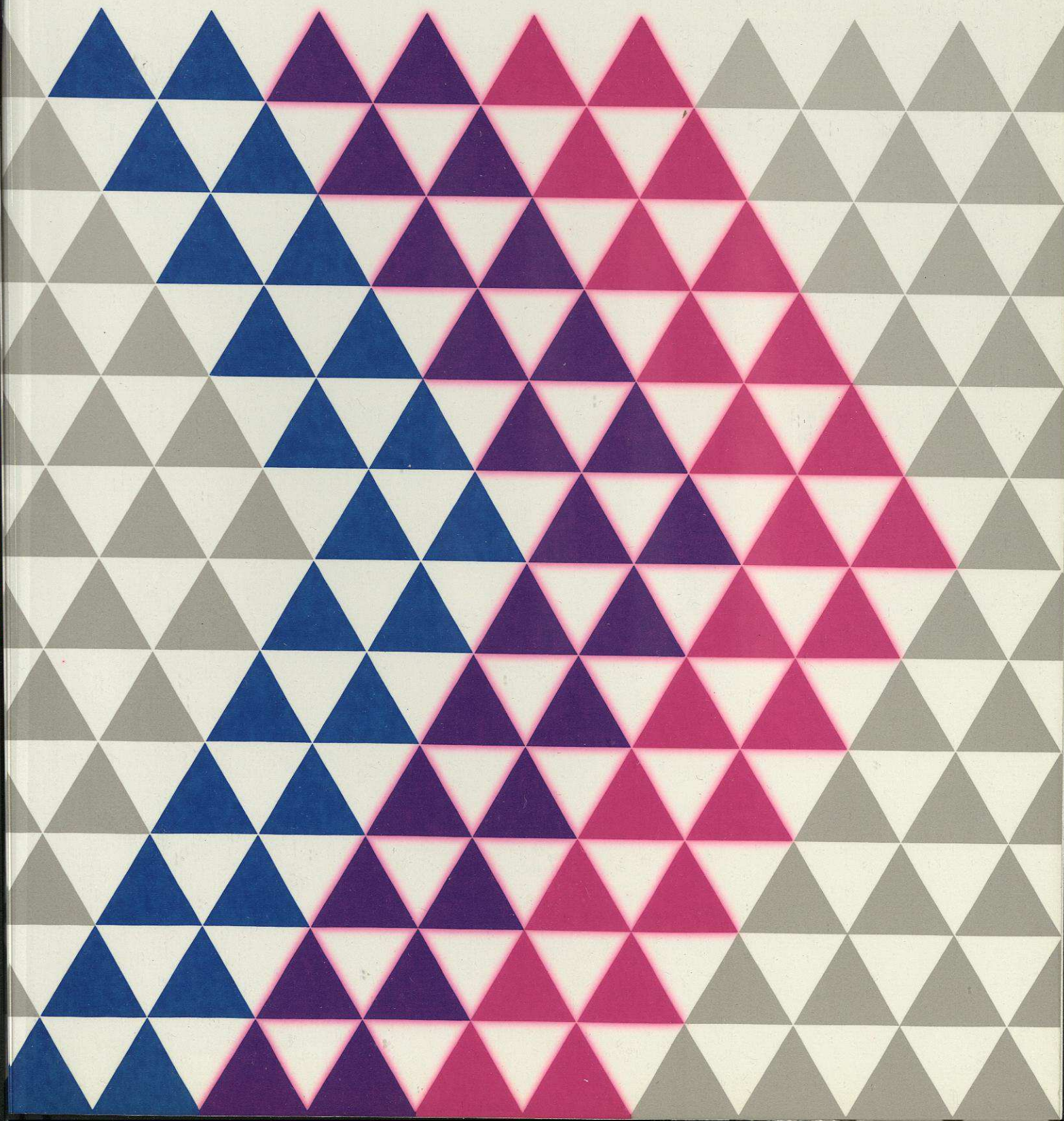
Information Systems: The New Economics

BUTLER COX FOUNDATION

Findings from the 1991 UK Foundation Conference



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The 1991 UK Foundation Conference was held at The Belfry, Wishaw, on 9-11 June. The conference addressed the conflict between the need to respond to short-term cost cutting and the need to build flexibility for the future. It concluded that the problem is soluble. There are many different ways in which systems directors can cut costs in the short term. Like all business managers, they can look for ways to maximise organisational effectiveness in the medium term. The long-term outlook is very promising in terms of economic growth, but both the business and the systems department will need to cope with even more change than they have done in the past.

This document contains a summary of the messages that emerged from the presentations and from the series of syndicate discussion groups that delegates attended during the conference. These findings were prepared by Richard Pawson, a consultant with Butler Cox, who was a delegate at the conference. A list of topics, speakers and syndicate discussion groups is included in the Appendix.

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In recent years, organisations have had to respond to many changes. Some now believe that, in the future, the only constant factor will be change itself, and that the pace of change will quicken. New markets are emerging, but so are new sources of competition; product life cycles are getting shorter, yet increasing consumer sophistication is raising the cost of new product development. In this turbulent environment, information systems are playing an increasingly important role, and many organisations have been investing heavily in building information systems to support the future.

Now, we face a new problem. Although there is evidence that, in the long term, the world economy will continue to expand, in the United Kingdom, we face a recession. Unlike the recessions of 1973/74 and 1979/80, which arguably delivered an 'ice-cold shower' to an industrial base that had grown fat and sleepy on government support, this recession will bring no such benefits. Nor is the prognosis good: the official indicators of recession are unlikely to turn around before the end of 1991, and the 'feel good' factor, the real key to recovery, may well stay depressed until 1994. Discussions of causes and culpability have already given way to discussions of survival. Job losses, reduced production and moratoriums on new development are becoming the norm.

The systems department finds itself caught between a rock and a hard place. How can it continue to build the flexibility needed for competing in tomorrow's marketplace while responding to the immediate demands from the business for cost reduction? Put another way, should the systems department concentrate on building for the future, or on ensuring that its organisation is going to be a part of the future?

This difficult question was the subject of the Butler Cox Foundation's 1991 UK conference. The conference started with two keynote speeches that exemplified the problem. Andrew Neil, editor of *The Sunday Times,* took the long-term view. He described a forthcoming economic boom, larger than the industrial revolution, in which information technology will play a vital role. An edited transcript of his speech is included on pages 11 to 14. Michael Hughes, managing director of economics and strategy with Barclays de Zoete Wedd, took the short-term view. He spelled out the likely course of the UK economy over the next year or two, and the business strategies that will be needed to cope with it. Edited highlights of his speech are included on pages 15 to 17.

During the course of the conference, the implications of these two issues for systems management were explored from several angles, using a variety of techniques – papers from management and information systems specialists, presentations from user organisations with relevant experience, and syndicated discussion groups. The conclusion was that the systems department must adopt clear and different strategies for the short, medium and long terms respectively:

— In the short term, the systems department must face the same constraints as the business. This will mean taking some uncomfortable actions.

— The main medium-term issue for both the business and the systems department will be organisational effectiveness. This means redesigning business processes and supporting them with the right management and technical systems.

— In the longer term, the ability to exploit the economic upswing will depend upon having the right business and systems models. Finding these right models will mean questioning traditional ideas of business size and structure, as well as the fundamental architecture of information systems.

These broad conclusions were backed up by a wealth of practical pointers and guidelines, which are summarised in this document.

In the short term, the systems department must face the same constraints as the business

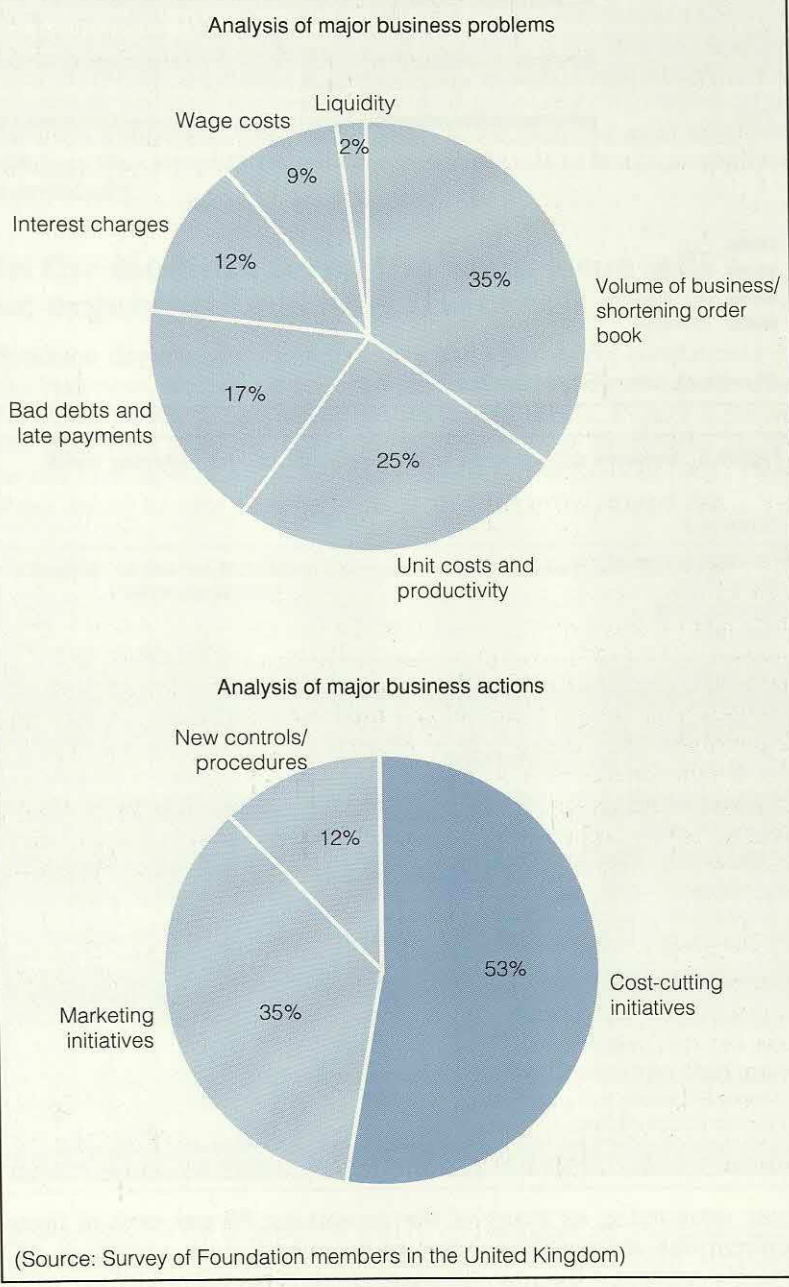
For most organisations, the days when the information systems department was judged by special rules and when the IT budget increased while others remained static are over. Rather than bemoan the loss of privilege, systems departments should view this as a sign of maturity. Having argued that information systems should be an integral part of the business, and that the systems department should have equal representation on the board with, say, finance or marketing, it must now accept the same constraints in times of hardship. While it is vital not to lose the longer-term vision, continued special pleading against a short-term view weakens the credibility of information systems as a business-related discipline.

The starting point should be a thorough understanding of the issues facing the business in general. Figure 1 shows the major business problems cited by senior UK managers in a recent Butler Cox survey, together with the immediate actions proposed. More than half of those actions entail cost cutting. The same survey revealed that the majority of systems departments are already having to respond to cuts or freezes in budgets, capital expenditure and staff numbers. Figure 2, on page 4, shows the breakdown.

The presentation by Tony Brewer of Butler Cox on responding to the cost pressures in the business, combined with the syndicate discussion group on cost-effective computing, generated a substantial list of actions that can help the systems department meet its share of the burden. These are summarised in Figure 3, on page 4.

First comes outsourcing of systems functions, ranging from facilities management, through networking, to research and development. Although outsourcing should never be a way of abdicating responsibility for systems, several Foundation members stated that they had previously used outsourcing to off-load costs. In at least one case, the company had 'insourced' those functions again when conditions had changed.

Figure 1 Current problems faced by companies are resulting in cost-cutting initiatives

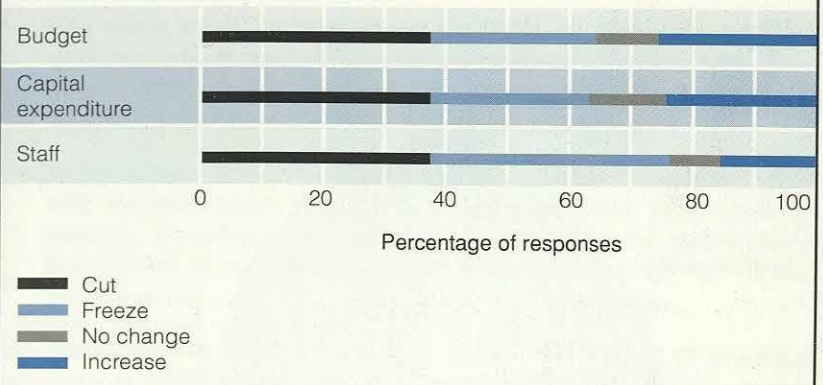


(Source: Survey of Foundation members in the United Kingdom)

Cutting staff is the most direct way to reduce expenses. One company had instituted a 'no trainees' policy; others had taken more painful losses. These cuts are often preceded or accompanied by re-organisations of the development departments, or consolidation of data centres. The latter may also reduce the cost of software licences.

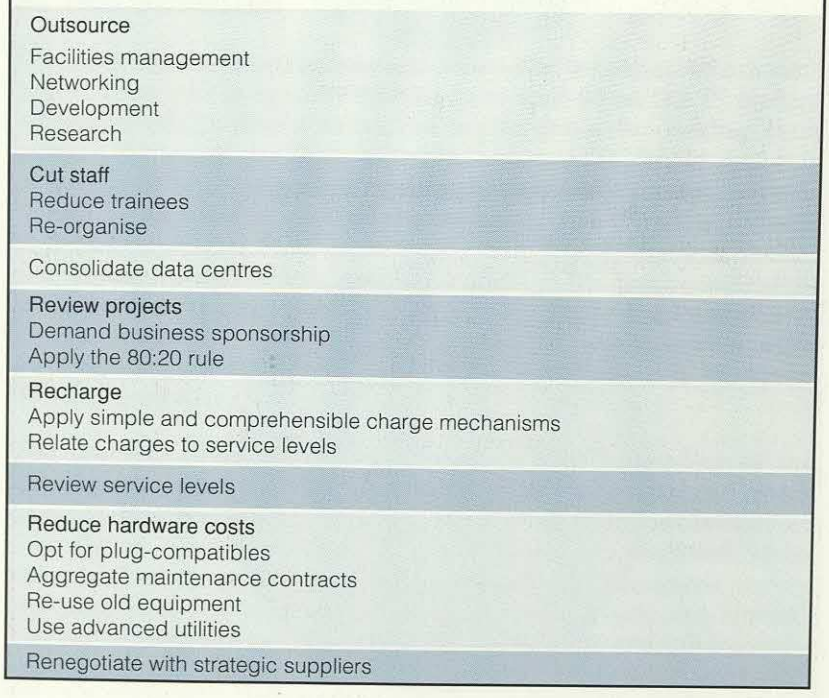
A rigorous review of development projects had produced major savings for some members. Most organisations found that 20 per cent of their applications delivered 80 per cent of the value, and

Figure 2 Most systems departments are now having to adapt to cuts or freezes in budgets, capital expenditure and staff numbers



(Source: Survey of Foundation members in the United Kingdom)

Figure 3 Systems departments have several options for reducing costs



some were axing as many of the remaining 80 per cent of their applications as possible. One had immediately curtailed all projects without a business sponsor, even if they were 90 per cent complete. In the words of the systems director, "We found that we were producing tailor-made suits for dead customers". Gerhard Dikkers explained how Wavin rigorously measured and monitored the performance of its systems group against several parameters.

Some were introducing recharging for the first time, not just to transfer the budgetary problem, but to ensure that only the most cost-effective applications were being addressed. Existing re-charging policies were being simplified, with the same objective. Gerhard Dikkers stressed the need for charge-out systems that were comprehensible to the customer, and that could be related to

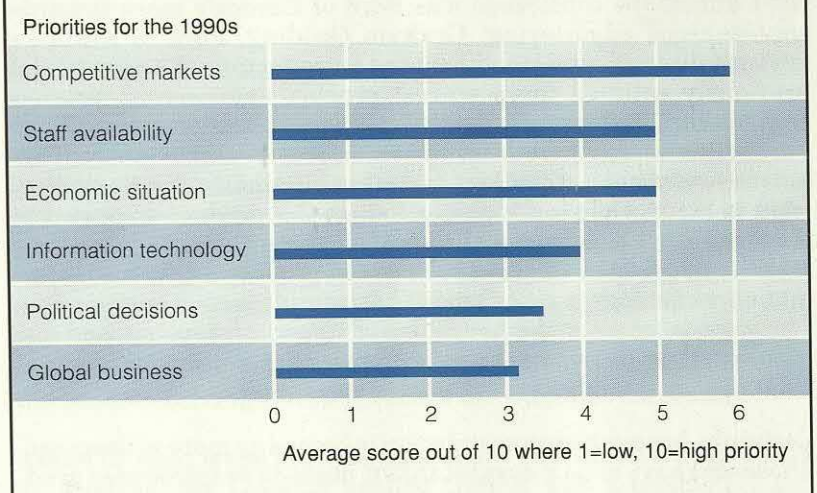
the service received. This led to a discussion of appropriate service levels – asking the customers what value they place on specific response times, for example.

Finally, members noted that there are still plenty of opportunities for reducing hardware costs. Possibilities include plug-compatible mainframes and minicomputers, aggregated maintenance policies, 'handing on' used equipment to smaller departments, and advanced utilities for better disc and processor utilisation. One member suggested that at the end of the day, the most effective strategy was simply to use its corporate muscle to beat its suppliers mercilessly.

In the medium term, the main issue will be organisational effectiveness

Systems departments need to face the short-term constraints of the business, but like the rest of the business, they also need to be thinking ahead to the medium and longer terms. Figure 4 shows the priorities of more than 100 European chief executives polled by the Management Consultancies Association early in 1991. They were asked to note their priorities for the period after 1992.

Figure 4 In the medium term, pre-recession business priorities will be taken up again



(Source: European chief executives' views on issues for the 1990's. Management Consultancies Association, 1991.)

The emphasis for this period will be on maximising profits through organisational effectiveness. This is not a short-term strategy, since the benefits will take some time to show through, and further expenditure may be needed, but the first stages can and should be started now. It is a strategy for the business, with information systems playing a key role. If the systems department views itself as an integral part of the business, it needs to apply the same strategy internally, too.

The key to maximising organisational effectiveness is business process redesign

In his presentation on unlocking the potential of information technology, Roger Woolfe of Butler Cox identified business process

redesign as the key to meeting the medium-term objectives of businesses. A syndicate discussion group on business process redesign identified several new aspects to this concept, as well as passing on the practical experience of Foundation members who had already undertaken such exercises. During the syndicate discussion group, several delegates commented that they now realised that they were doing business process redesign but had not known it by that name.

Business process redesign can be driven by several internal or external factors: one company started it when a key customer stated bluntly that he was satisfied with the products but dissatisfied with the service. Competition was another driver, particularly in the financial services arena. For another large organisation, the process redesign had resulted from a corporate-wide initiative for total quality management.

Experience showed that business process redesign requires the commitment of the board, and preferably, the personal ownership of a director. It also requires middle managers to have a commitment to the company as a whole, not merely to their own functional division or business unit. New reward mechanisms, combining both tangible benefits and the recognition of achievement, may be needed to bring this about.

One of the most dramatic examples of business process redesign cited during the conference was Ford of Europe's move towards simultaneous engineering. Graham Gooding, Ford of Europe's systems director, explained how the introduction of a new model previously entailed three stages: product engineering, process engineering, and transfer to the manufacturing concerns. Now, Ford is increasingly running the three stages concurrently. This not only reduces the total lead time, but eliminates the waste that used to occur when a decision taken at the product engineering stage could not be economically justified at the process engineering stage and had to be referred back to the product engineers. Information technology is a key enabler for simultaneous engineering. The various teams make heavy use of videoconferencing, and one of the systems department's objectives is to make the exchange of CAD files as straightforward as electronic mail.

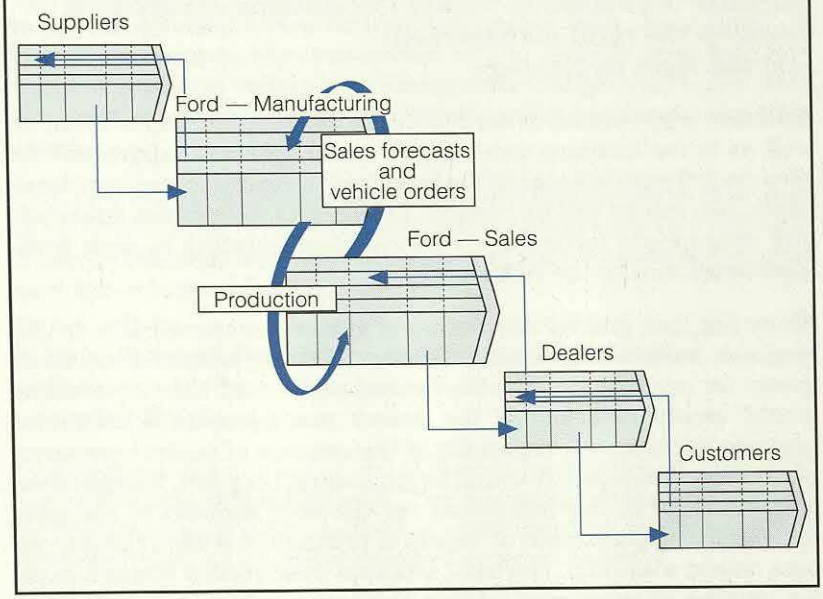
Certainly, business process redesign is becoming more widespread. Those who have done it suggest that it needs to be introduced gradually, one process at a time, and that it should be applied continuously – in other words, organisations should not stop looking for improvements after the first redesign. One Foundation member claimed to enforce the approach in a novel and effective manner: no request for a new application would be considered by the systems department unless the client had first redesigned the business process.

Process redesign applies outside as well as inside the organisation

Graham Gooding stressed that the same concept should be applied both within the organisation's boundaries and across them. (Redesign across organisational boundaries has been described by others as business network redesign.) Ford of Europe has applied such thinking both to its outgoing logistics (vehicle ordering and delivery) and to its inbound logistics (material and subassemblies

ordering), following Professor Michael Porter's value chain model (Figure 5). On the vehicle-ordering side, all orders are posted electronically and confirmed overnight; there was previously a three-week delay.

Figure 5 Ford has applied the principles of business process redesign across its whole value chain



On the material-ordering side, Ford of Europe has implemented the much-publicised invoiceless payment system, pioneered by Ford in the United States, which it developed after studying Mazda's operations in Japan. Graham Gooding explained that, fundamentally, a conventional invoice clearance department is concerned with spotting errors – differences between quantities ordered and delivered – a zero-added-value operation. The only real barrier to invoiceless payment, where Ford pays for goods actually received, was that the accounts department did not trust the goods-receiving clerks to record the numbers accurately.

Asked in what ways Mazda's operations still differed from Ford's as a whole, Mr Gooding replied that it was a completely different culture. Mazda's systems development department is even prepared to give consideration to the notion of zero-defect programming.

New applications for IT can support this initiative

Information technology is clearly an enabler for all of the initiatives described above. A general conclusion from the conference was that new types of applications would be needed to fulfil these medium-term objectives.

Gerhard Dikkers gave Wavin's view that the future lay in small but advanced applications rather than in large-scale implementations. However, he also stressed the need to build scalability into applications. Lawrence Churchill of Allied Dunbar, a company that acknowledges the role played by IT in its success to date, saw that

future applications lay clearly in 'market building' rather than in 'distribution-related functions'.

Finally, with the rise of image processing and better tools for integrating image systems with conventional data systems, many companies were starting to look at the total elimination of paper flow, not merely its reduction.

Effective organisation within the systems department requires the right management and the right technology

Effective organisation is needed inside the systems department as well as in the business generally. For the systems department to play its full part in helping the business to reach its medium-term goals, two things will be needed: the right management approach and appropriate technology. Several ideas relating to each were mentioned during the conference.

Many felt that greater devolution of systems responsibility to the business units was needed. Delegates in the syndicate discussion group on organisational effectiveness felt that this devolution would create new issues for career management within the systems department, especially if the concept of central resource pools were developed. It would be necessary, they felt, to give more responsibility to the individual for the development of his own career. The appointment of 'heads of profession' within this structure would also help. Gerhard Dikkers described a similar need for 'centres of excellence' within the organisation, for particular technologies or approaches. Lawrence Churchill of Allied Dunbar stressed the need for a teamworking culture, and in particular, for multidisciplinary project teams.

Another major responsibility that will increasingly be assigned to systems management is competitor analysis – monitoring the systems activities and applications of competitors. Lawrence Churchill suggested that a strategy of cloning, and when possible, leapfrogging, competitors' systems could be as effective as always striving to be the innovator.

The right set of technology for achieving the medium-term goals follows largely from the management approach. Devolution of systems responsibility would go hand in hand with distribution of information systems. Moves away from large, host-based systems towards local area networks and client-server architectures would add flexibility and exploit the widening price advantage of smaller systems.

New development approaches, including the use of I-CASE and new end-user development systems, would also be well suited to supporting the objectives of organisational redesign.

In the longer term, the ability to exploit the economic upswing will depend upon having the right business and systems models

For the short term, systems departments need to concentrate on cost cutting, and in the medium term, on maximising value

through effective organisation. They also need to be thinking ahead to the longer term. The recession in the United Kingdom will come to an end, maybe in 1992, but perhaps not until 1994, according to Michael Hughes, but it is even more important to look at the broader international picture.

Andrew Neil believes that the world is on the verge of a period of economic expansion far bigger than the industrial revolution two centuries ago. (See the edited transcript of his speech on pages 11 to 14, for details.) Three factors will enable this: the triumph of liberal democracy, the dominance of the market economy, and rapid advances in technology. These three things came together at the start of the industrial revolution and it is about to happen again.

This new era holds tremendous possibilities for business. However, the business models needed to succeed in this era are very different from the business models of the past, and the new ones will require new systems models to support them.

New corporate structures, new types of manager and new roles for individuals must be developed

The new era will not be the era of the big corporation; it will be the era of the small business unit. The big corporations that survive will be those that have made the transformation to what Andrew Neil described as 'confederations of entrepreneurs'.

A new approach to management will be needed. The corporate management science of the 1950s and 1960s, in which it was thought that good management could run anything, and where the role of the individual worker was given little thought, simply will not work. Tomorrow's maxim will be 'organise the job to fit the individual', not vice versa.

In California, leading organisations are already exploring the idea of a 'cafeteria of compensations', covering not just the way that the individual wants to be paid, but where he wants to work, and how much commitment he wants to make to the employer. Managers will have to pay close attention to the development of individuals and their career paths. Rotation between departments will become the norm – both Wavin and Allied Dunbar have made a strong commitment to this concept. Wavin suggested that a period spent overseas will be an absolute requirement for a management position in the future.

David Norburn, director of the Management School at Imperial College, outlined the five critical skills that managers will need in this new era. First, they need a 'satellite camera' view, paying close attention to changes in the world economy and markets. What impact will the break-up of the Soviet Union have, for example? Second, the manager needs to play 'court jester', a sort of power broker who understands the individual aspirations, hopes and fears of his staff, his colleagues and the companies that he does business with. Third, he needs to be objective, employing 'clinical realism' on all evaluations. This means concentrating on the important issues, including who a company's real competitors are. Many organisations concentrate on their nearest national competitor, for example, instead of watching out for new threats from

overseas. The manager needs to be a strategist. The good strategist does not plump for the latest management buzzwords but 'cherry picks' from management tools and concepts. Finally, the manager needs to be 'an empathist'. Such managers get their kicks from seeing other people succeed, not just themselves.

The biggest change in the business model, claimed Andrew Neil, will be a geographical one. The power of 'telecommuting' will make it increasingly possible for individuals, groups or corporations to be located where it most suits them. As this possibility is increasingly taken up, individuals will start to vote with their feet, choosing where they want to live, and perhaps offering a particular service to more than one employer.

The key to flexible information systems will be common architectures and data models

These changing styles of business and organisation, together with many more radical changes, as yet unforeseen, will require very flexible information systems to support them. Lawrence Churchill of Allied Dunbar described the need for a 'culture to respond to unforeseen changes', both in the business and within the systems department.

Such a culture will require flexible individuals. Both Allied Dunbar and Wavin described their policies for encouraging multidisciplinary teams and cross-functional managers. A career path that alternates between systems and line management may be the norm rather than the exception in future.

At the technical level, flexible systems does not mean anarchic systems. Several speakers argued that true flexibility comes from having the right level of standardisation and central control. Gerhard Dikkers of Wavin pointed to the need for a common data model and suggested that the systems department needed to maintain a 'portfolio of systems' that could form the basic building blocks of new applications. The most difficult aspect of this is getting common agreement for basic requirements from operations in different countries.

Roger Woolfe of Butler Cox argued that fully integrated applications would be a prerequisite for organisational flexibility. The principal challenge for the systems department is to build a 'process architecture'. Building on a foundation of solid functional systems, the process architecture adds appropriate layers of standards and common models to ensure maximum flexibility. These layers include common technical and data architectures, group-wide networking, process redesign, tools to build flexibility rapidly and application software to support teamwork.

Information technology and the working revolution

Edited transcript of the keynote speech by Andrew Neil, editor of *The Sunday Times*

I want to make some predictions and forecasts about the way our society is going under the impact of new technology, and to do this, I will use a tried and tested journalistic technique, which is to simplify and then exaggerate.

My first proposition is that the world is drawing to the end of an era that was dominated by very big business corporations. Only those big corporations that manage to turn themselves into what I would call 'confederations of entrepreneurs' will survive and prosper in the information age. The right size for a profit centre or entrepreneurial group, by which I mean a group of colleagues working towards the same business objectives, is becoming very small in the information society – typically not more than 10 people.

This is not what a generation of business students was brought up to believe. The business-school textbooks of the 1970s, such as John Kenneth Galbraith's *The New Industrial State*, held that the power of the very biggest multinational corporations was spreading all over the world, and that nobody, except a hopeless romantic, could think that we were on the brink of the age of the small man or woman. In fact, precisely the opposite trend that they were predicting had already begun to occur.

The 30 million net new jobs that have been created in the United States in the last 20 years have been created entirely in small companies. The Fortune 1000 have not contributed a single net new job to the American economy since 1963. In the heyday of big businesses, which, with historical perspective, we can see was the 1950s, an average of 100,000 new American companies a year were formed. In the 1980s, the average was 700,000 a year. Moreover, a recent study by the National Science Foundation showed that today's small firms produce 24 times as many innovations for each research and development dollar spent as big companies. The same, if less pronounced, trends have been evident in Britain, West Germany and Japan. The number of self-employed people in Britain, for example, almost trebled in the 1980s. Perhaps even more importantly, the number of people who wanted to be self-employed almost quadrupled.

My second proposition is that the main source of economic growth in the new age is going to be telecommunications allied to the computer. Although it may be hard to accept in the current economic recession, looking further ahead, I believe that we are on the brink of the fastest market-driven economic development that the world has ever seen.

In the past 25 years, two developments of enormous historical significance have taken place. First has been the emergence of liberal democracy – the only universal and expanding ideology left in the world. Second has been the global victory of market economics. Moreover, these two revolutions are taking place at the

same time as enormous advances in scientific and technical knowledge. This juncture has only happened once before in modern times. James Watts's invention of the steam engine occurred just as parliamentary democracy was spreading through Britain, and presidential democracy through the United States. It meant that these two countries were able to take most advantage of the technological breakthroughs to produce the industrial revolution.

Now, the spread of democracy and the spread of market economics are being accompanied by huge advances in our ability to process information. It would now be possible for one person, using a desktop PC, to check more correlations in one afternoon than Einstein could have done in the whole of his lifetime. Over the next 10 years, developments in artificial intelligence, silicon compilers and parallel processing, to name just three new technologies, will produce a 10,000-fold increase in information technology.

This telecoms-cum-computer revolution is the third great transport revolution of modern times. The first, based on the railways, was derived from the steam engine of Watt and the free enterprise principles of Adam Smith. The second came with the motor car and was to see the United States replace Britain as the premier industrial nation.

The two main characteristics of the third transport revolution are that information becomes weightless, and that the costs of transmission will be largely independent of distance. One implication is that information workers, soon to be most workers in our society, will be able to live where they want and telecommunicate to work. They can live, if they wish, on a beach in Tahiti and telecommute daily to computers and colleagues in London, Frankfurt or Tokyo – or more likely, to the tax haven through which they will choose to operate. During the 1950s, workers in rich countries were 70 per cent hands-on workers and 30 per cent information workers. These ratios are in the process of being radically reversed and faster than most people realise.

The liberalisation of lifestyles that goes with such revolutions has happened with each past transport revolution, and has traditionally been met with resistance from those in power. The Duke of Wellington said in Parliament in the 1830s, as the railways spread through Britain, "These things will enable the working classes to move about". He understood that the railways would break up a society in which every yokel was so immobile that he was permanently subservient to the most powerful employer in the district. The reaction of the British parliament to the motor car was to pass an act (sponsored by the horse carriage trade) requiring that a man carrying a red flag had to walk before it, thereby limiting its speed to four miles per hour – slower than a horse. Throughout Western Europe, there have been plenty of latter-day equivalents of the horse carriage trades placing red flags in the way of the information revolution, including state-owned or privatised telecommunications authorities and TV broadcasters trying to hold onto their monopoly of services.

As these red flags now start to disappear, it will be possible for a country to have as its main export industry men and women working anywhere in that country, via computer terminals, for whoever around the world wishes to employ them. Companies that

persist in congregating their offices and staff in some of the most expensive locations in the world will increasingly find themselves being undercut by people who are able to call up exactly the same information from far cheaper locations.

The United States is in the process of creating millions of such telecommuting jobs, because it speaks the two languages essential to success in the information society – English and Computer. Over the next decade, the United States will need millions more workers fluent in both these essential languages than their own educational system seems likely to be able to deliver. In the village of Castle Island in County Kerry, Ireland, New York Life, the fifth largest insurance company in the United States, now employs 50 young people to process its insurance claims via satellite links to its computers in New York. The choice is logical: Ireland has the best qualified school leavers in Europe.

In Britain, by contrast, the reading standards of seven-year-olds have reached a 40-year low. In a recent survey of 16-year-olds, conducted for *The Sunday Times*, one in six could not identify Britain on a map, 59 per cent could not spell 'embarrass' or 'satellite'. We now live in a country in which the top 2 per cent of 16-year-olds in mathematics are equal to the average level in Japan. The school system in Britain has always been socially divisive; it is now threatening economic suicide. Unlike in the industrial era, it is no longer sufficient to have a mass of largely uneducated people to serve as assembly-line fodder, and a smaller élite at the top who do the thinking. In the information society, basic skills will need to go all down the line, and for that, we need education in depth.

My third proposition is that, in the information society, the growth of small-business, entrepreneurial endeavour, combined with the ability to telecommunicate, will reduce the influence of big government, big business and big unions. Individuals will not want to be part of huge, hierarchical corporations; they will want greater control over how they work, when they work and why they work.

Assuming an annual growth in personal income of 3.5 per cent, for example, real incomes will double in the next 20 years. Many people will not want to use that income to double the quantity of their material goods; many will prefer to work a four- or three-day week, but it will not do to enforce such a concept from the top down, even on the basis of majority vote. The only way to operate in the future will be to operate what is known in Silicon Valley as a 'cafeteria of compensations'. An individual will be allowed to decide which combination he chooses of salary, flexible hours, job sharing, work objectives, pension or health benefits, and most important of all, the degree to which he wants to 'belong' to the organisation. Many will opt for a more entrepreneurial, arms-length relationship with the organisation they work for, and telecommuting will allow them to do that. There will also be a trend away from working for a single organisation, towards working on 'performance contracts' for several organisations, from home, from local offices, from shared cooperatives, at central headquarters, or a combination of all of these.

The implications of telecommuting are probably even bigger for government. Currently, we delude ourselves that we choose the

kind of society in which we want to live – on the basis of a single vote every four years, between just two or three options. We then let the politicians, so elected, take away almost 50 per cent of our income, and make rules that dictate how we spend much of the other 50 per cent. In the future, people will vote for their government with their feet. Individuals will be able to live in, and telecommute from, an area where the government, which in the future could be very local government, best reflects and permits the lifestyles and customs that they want to live under. This will include consideration of local education, crime rate, leisure facilities and climate.

If the mass of people vote for a 'bossing-about' government, enterprising men and women will simply move away from it. State socialism, a product of the industrial age, is incompatible with the information age. The role of information technology in the revolutions of Eastern Europe is still not well understood. A recent article in *The Wall Street Journal* reported on a meeting in Prague where Russian dissidents had come for advice from the Czechoslovakians. Asked what they needed to help in the cause of revolution, the Russian dissidents came up with what might be called a modern democracy kit: not guns and bombs, but PCs, photocopiers and fax machines. Telecommuting will also be the death knell of big unions. Telecommuters may want to join friendly societies of like-minded people, but they will not want unions laying down rules and conditions from above.

I am talking now about a world that is being created as a result of the technology that you as IT professionals are dealing in – a world in which big government will be cut down to size, where big businesses will have to replace their present corporate hierarchies with entrepreneurial confederations, where big unions will probably cease to exist, and where economic success will go to those countries that care most for the two Es – education and the environment. It is a world that I am rather looking forward to.

Economic lessons from the recession

Edited highlights of the keynote speech by Michael Hughes, managing director of economics and strategy, Barclays de Zoete Wedd

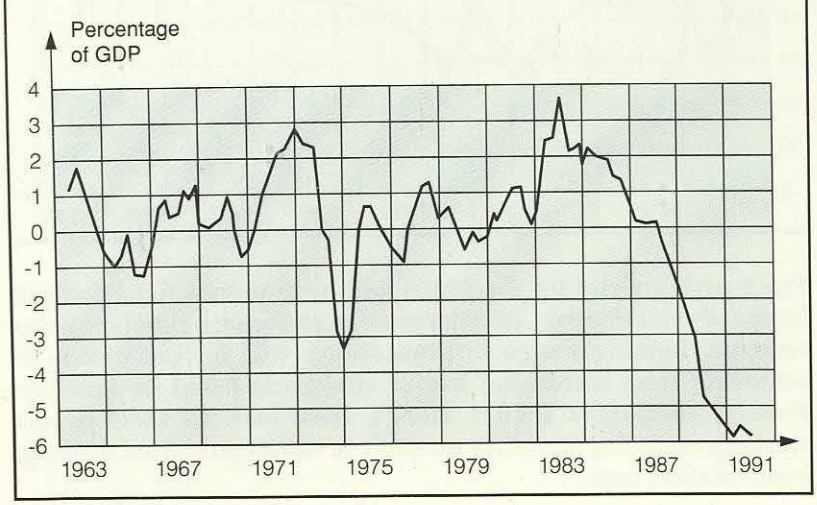
The definition of a recession is generally agreed as two successive quarters of falling output. The UK economy is unquestionably in recession. There is no such general agreement about economic recovery. The government has adopted a variety of measures, by which it hopes to identify the upturn, of which the latest and most improbable is electricity consumption. My own definition is that recovery is on its way when economic growth exceeds its long-term trend. On that basis, recovery is unlikely before 1994. That is the length of time that it will take to rebuild consumer confidence. For most businesses, now is the time to batten down the hatches, to weather the storm ahead.

It is important to realise that this current recession is qualitatively different from the previous two. The 1973/74 recession was triggered by the oil crisis. Many companies responded by raising their prices. The 1979/80 recession was fuelled by an over-valued exchange rate on the pound, and by excessively high stocks. Companies responded by cutting staff and promoting efficiency. The current recession is a purely domestic one – other countries are also facing recession, but for different reasons. The nature of this recession will require a different response from the previous two.

The financial sector will be hard hit: this is the first recession where there is no 'endowment effect' for the banks. Because they now have to pay interest on current accounts, they cannot provide for bad debts simply by increasing interest rates. So far, no major financial institution in London has gone 'belly up', but many believe that is only a matter of time.

Those same financial sectors are also at least partly to blame. All the Western economies now facing recession have financial sectors that are too large for the economy as a whole. The current corporate cash deficit (see Chart A) has its origins in the freedom of credit that resulted from the deregulation of the mid-1980s.

Chart A Corporate deficit



Aiming for positive cash flow must be a high priority for businesses in the early 1990s, as the cost of capital continues to rise.

The second priority for large businesses in the early 1990s will be to present a 'quality' and 'safe' image to the city. Chart B shows the credit spread – effectively, the ratio of the coupon on corporate debt to that of government issues. The rising spread indicates both the growing loss of confidence in corporate debt, and a growing cost of servicing bad debts.

Chart B Credit spread

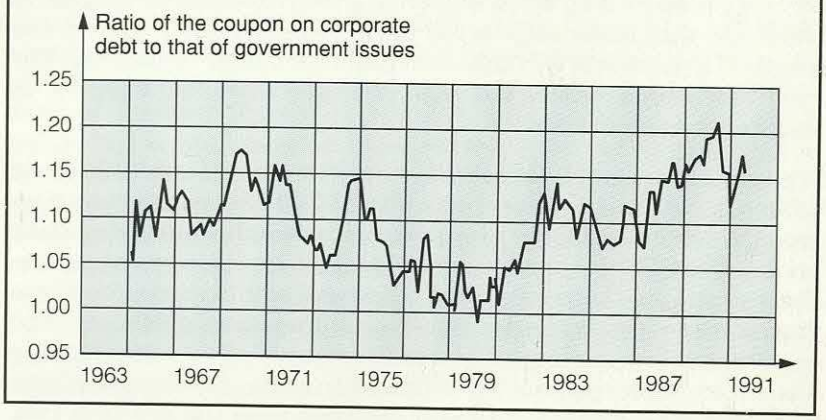
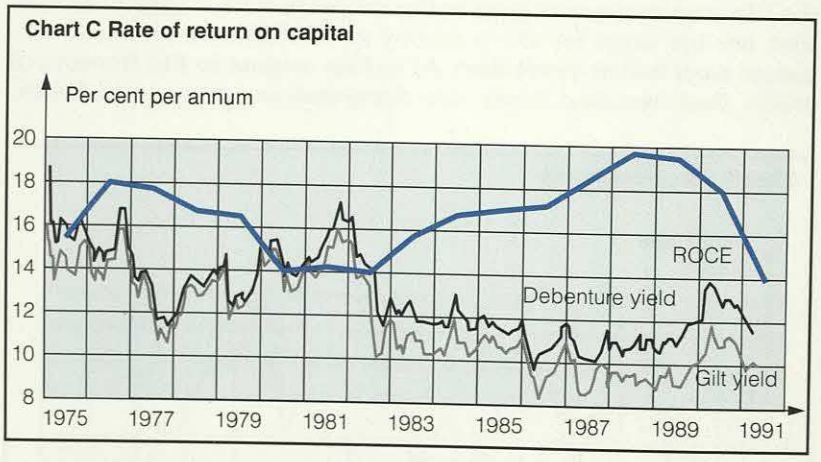


Chart C shows how the rate of return on capital employed (ROCE) has fallen dramatically over the last three years, while the cost of borrowing money has increased. Not only is merger mania a thing of the past, for most companies, disposals will become the third priority for the 1990s. This can be viewed as a positive rather than a negative development. In our view, increasing disposals will be the first sign of recovery, rather than of deepening recession.

Chart C Rate of return on capital



The fourth priority for the 1990s will be to reduce fixed costs in favour of variable costs, in order to align costs more closely to sales revenue. Linking wages to profitability will be one means of achieving this. Increasing use of outsourcing will be another. Finally, companies should take a close look at their export strategy, ensuring that they attempt to export only from a strong home-market base.

In conclusion, then, companies need to establish new priorities to ride out the recession for the next three to four years. Five of these priorities should be:

— Aim for positive cash flow.

— Establish a quality/'safe' image with the financial markets.

— Dispose of assets not delivering a favourable return on capital employed.

— Reduce fixed costs in favour of variable costs.

— Export only from strong home markets.

Appendix: List of topics, speakers and syndicate discussion groups

Topics and speakers

Information technology and the working revolution
Andrew Neil, *The Sunday Times*

Economic lessons from the recession
Michael Hughes, Barclays de Zoete Wedd

European information systems: the management and economic implications
Gerhard Dikkers, Wavin BV

Unlocking the potential of information technology
Roger Woolfe, Butler Cox plc

Information technology as an integral part of the business
Lawrence Churchill, Allied Dunbar plc

Extending the boundaries of the organisation
Graham Gooding, Ford of Europe Inc

The changing nature of organisation structures
David Norburn, Imperial College of Science and Technology, London

Responding to the cost pressures in the business
Tony Brewer, Butler Cox plc

Syndicate discussion groups

Cost-effective computing

Redesign of business processes

Competing in turbulent and changing markets

Organisational effectiveness

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The Butler Cox Foundation is a service for senior managers responsible for information management in major enterprises. It provides insight and guidance to help them to manage information systems and technology more effectively for the benefit of their organisations.

The Foundation carries out a programme of syndicated research that focuses on the business implications of information systems, and on the management of the information systems function, rather than on the technology itself. It distributes a range of publications to its members that includes research reports, management summaries, directors' briefings and position papers. It also arranges events at which members can meet and exchange views, such as conferences, management briefings, research reviews, study tours and specialist forums.

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— The publications are terse, thought-provoking, informative and easy to read. They deliver a lot of messages in a minimum of precious reading time.

— The events combine access to the world's leading thinkers and practitioners with the opportunity to meet and exchange views with professional counterparts from different industries and countries.

— The Foundation represents a network of systems practitioners, with the power to connect individuals with common concerns.

Combined with the manager's own creativity and business knowledge, membership of the Foundation contributes to managerial success.

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60 Expert Systems in Business
61 Competitive-Edge Applications: Myths and Reality
62 Communications Infrastructure for Buildings
63 The Future of the Personal Workstation
64 Managing the Evolution of Corporate Databases
65 Network Management
66 Marketing the Systems Department
67 Computer-Aided Software Engineering (CASE)
68 Mobile Communications
69 Software Strategy
70 Electronic Document Management
71 Staffing the Systems Function
72 Managing Multivendor Environments
73 Emerging Technologies: Annual Review for Managers
74 The Future of System Development Tools
75 Getting Value from Information Technology
76 Systems Security
77 Electronic Marketplaces
78 New Telecommunications Services
79 The Role of Information Technology in Transforming the Business
80 Workstation Networks: A Technology Review for Managers
81 Managing the Devolution of Systems Responsibilities

Recent position papers and directors' briefings

The Changing Information Industry: An Investment Banker's View
A Progress Report on New Technologies
Hypertext
1992: An Avoidable Crisis
Managing Information Systems in a Decentralised Business
Pan-European Communications: Threats and Opportunities
Information Centres in the 1990s
Open Systems
Computer Support for Cooperative Work
Outsourcing Information Systems Services
IT in a Cold Climate

Forthcoming research reports

The Future of Electronic Mail
Technical Architecture
Downsizing — An Escape from Yesterday's Systems
Visual Information Technology

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