The complete guide to Flexible Working
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In the Information Age, the “office” is no longer a building. Instead, it is a sophisticated intercommunication system, distributed across global digital networks.

In association with Flexibility.co.uk
For many years, people have been employed flexibly – part-time, short-term, annualised hours, on contract, and so on. In fact, the UK is often said to have the most flexible labour market in Europe. Certainly the labour market reforms of the 1990s eliminated the traditional concept of a “job for life”.

Yet, in spite of these reforms, the underlying nature of work seems to have changed very little. For most people, work still revolves around offices, desks, commuting and fixed hours. In effect, “going to work” is still associated with having to make a journey to an employer’s place of business.

However, the “Information Age” is challenging these misconceptions – that work involves making a journey, and that it needs to take place at a fixed location.

New forms of flexible working are emerging as technology gets better and cheaper. We are becoming familiar with terms such as teleworking, hot-desking and virtual offices. Where once there was only flexible contracts and flexible working hours, there is now flexibility in location as well.

In the Information Age, the “office” is no longer a building. Instead, it is a sophisticated intercommunication system, distributed across global digital networks. A growing proportion of work can be done anywhere – in an office (any office), at home, on the move – in fact wherever reliable access to the global digital networks can be found.

Today, it is often easier to move the work to the worker rather than vice versa. Furthermore, if it is properly implemented, flexible, location-independent and mobile working can substantially reduce costs, boost productivity and deliver a host of other benefits to employers, customers and staff.

So, has the era of flexible working arrived? Well, almost. The problem is that few employers are fully aware of its advantages and even fewer are prepared for the revolution in working practices, with its implications for the organisation, culture, facilities and management.

This Toshiba Guide is intended to help managers and other business people in large organisations to face up to these issues; to discover the opportunities; and to learn from our experience and research. Ultimately, it aims to help you understand and implement successful new ways of flexible working.
Prepared in conjunction with HOP Associates, pioneering consultants in the world of flexible working, the approach of the Toshiba Guide is "holistic". We have found that maximum advantage is gained where organisations aim for "total flexibility", rather than trying to compartmentalise flexible working practices. For example, flexitime produces better results when combined with flexible place options – and both are more effective when employers also tackle business processes and customer communications.

The chapters in the Guide fall into four sections:

I. Understanding flexible working in the Information Age (chapters 1,2)
II. The components of flexible working (chapters 3,4,5)
III. Integrating the business benefits with wider objectives (chapters 6,7,8)
IV. Implementing a flexible working project (chapter 9)

Our objective is to take the reader from an overview of flexible working right through to guidance for implementation. En route, we provide an analysis of the issues and prospects for change in each of the key areas of facilities, technology and human resources. And in keeping with our "holistic" approach, we show the possibilities for integrating organisational objectives with wider social and environmental objectives.

In the spirit of the times, this Toshiba Guide is complemented by the website www.flexibility.co.uk. This contains further insights, as well as a practitioner forum and electronic versions of some of the tools referred to in the Guide.
Chapter 1

An introduction to flexible working
This chapter provides an overview of the reasons for introducing flexible working, illustrating the wide range of benefits. We examine:

- The drivers for change towards greater flexibility and use of technology
- The various forms of technology-enabled working
- The benefits of flexible working to employers, staff, the wider community and the environment
- Facts and figures, with a particular focus on the growth of teleworking
- The likely future developments and new challenges for managers

WHAT IS “FLEXIBLE WORKING”

“Flexible Working” is a broad term used to describe the overlapping fields of:

- Changes in the nature of employment – essentially moves to greater variety and flexibility in work patterns
- Changes in technology – enabling work to be carried out in different ways

In the first category, are the various forms of new or “non-traditional” working practices. Essentially, these can be placed under four headings: flexible contracts, flexible hours, flexible location and flexible tasks:

<table>
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<th>Varieties of flexible work</th>
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<tr>
<td>Flexible contracts</td>
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<tr>
<td>• Outsourcing</td>
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<td>• Use of agency workers</td>
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<td>• Temporary/fixed term contracts</td>
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<td>• Part-time working</td>
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<td>• Jobshare</td>
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<td>• Compressed working weeks</td>
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<td>• Annualised hours</td>
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<td>• Zero hours</td>
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<td>Flexible location</td>
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<tr>
<td>• Working on the move</td>
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<tr>
<td>• Working from home</td>
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<td>• Working from touchdown centres/ telecentres/satellite offices</td>
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<tr>
<td>(Variously described as location independent working, teleworking, telecommuting, home working, remote working, anywhere/anytime working)</td>
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<tr>
<td>Flexible tasks</td>
</tr>
<tr>
<td>• Multi-skilling</td>
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<td>• Removal of job demarcations</td>
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<td>• Self-supporting executives</td>
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<td>• Portfolio working</td>
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<td>• IT-supported customer services</td>
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In the second category are the developments in information and communications technologies enabling the new methods of working. These may incorporate or support the first category. In particular, they can have a powerful impact on introducing flexibility of location. However, it is important to see their development within the context of changes to the nature of employment as a whole.

REASONS FOR INTRODUCING NEW WAYS OF WORKING

Business drivers for change

Employers are under continual pressure to:

- Increase competitiveness
- Improve the quality and widen the scope of services to customers
- Boost productivity
- Manage the workforce more efficiently
- Reduce costs
- Increase the organisation’s capacity to innovate
- Improve morale and motivation of the workforce, aiding recruitment and retention of employees

Introducing flexible working can be a highly effective way of responding to these pressures.

Social drivers for change

More flexible forms of work may also be used to make employment more “family friendly” and to assist equal opportunities or environmental objectives. A key point is that variable hours and flexible location working can be arranged to meet the objectives of both employers and employees. Furthermore, location-independence of work can also allow employment to be regenerated in disadvantaged regions.
VARIOUS FORMS OF NEW, TECHNOLOGY-ENABLED WAYS OF WORKING

Home-based teleworking

Essentially, teleworking means “working at a distance”, in some place other than the regular office. In other words, it makes use of computers and telephony in preference to physically travelling to work.

Today, an increasing number of organisations, in both the private and public sector, are introducing home-based teleworking as a flexible working option. Diverse examples include sales personnel, social services, practitioners, financial advisers, mobile maintenance engineers and call-centre agents. The result is that more and more employees are able to work at home, or use their home as a base, while spending more time out in the field with clients.

Fleeing the workplace in order to work

We are seeing a growing tendency towards “ad hoc teleworking”. This is particularly prevalent amongst managers and professionals who want to escape the office to complete their work without interruptions, or who regularly bring work home. Recent research shows that 80% of all teleworkers are currently managerial or professional.

Whilst many of these people remain “available” by phone or fax, the “tele” part of their work is, to some extent, more apparent than real. For instance, they may transfer their work to their home PC by bringing a disk back with them. Such ad hoc arrangements will increasingly be supported by dial-in access.

Distributed teams

In larger organisations, it is becoming more common to have interdisciplinary and interdepartmental project teams. Technology can bring many advantages to team working, particularly speed of communication, more open and collaborative access to information, and savings in travel. For example, effective use of e-mail for communication and file sharing is now widespread. In principle, given the right IT and communications infrastructure, it should make no difference where employees are located.
Networked relationships

Similar considerations also apply for networked relationships between partner organisations, and between clients and contractors, where sharing electronic information not only improves efficiency, but also opens up new ways of working. Previously, regular team meetings would need to take place in a physical location, involving much travel and rationing of each individual’s input during the meeting. With a suitable IT infrastructure, information can be shared and worked on asynchronously, so that meetings can become more focused. In addition, meetings can be either face-to-face or virtual, using any of the available conferencing technologies, including audio-conferencing, video-conferencing, e-mail “chat” or virtual presence.

Networking for virtual teams

Cutting edge examples of virtual teams can be found in the broadcasting and film industries. One such instance is Sohonet, an advanced digital media network, linking media producers, processors and consumers in central London. The network allows for e-mail, browsing, video-conferencing, and transferring of files and resources at the speeds needed to process professional-quality sounds and pictures in real-time. This kind of high-speed network enables projects to be developed between different specialist organisations. In addition, smaller organisations can network and compete effectively with the in-house resources of larger organisations.

Outsourcing

One effect of electronic communication has been an increase in outsourcing, particularly of non-core functions. This can involve a third party undertaking, such as accounting, secretarial or IT functions, or it could be an in-house team operating remotely to run, for example, a customer service call-centre. Such arrangements, coupled with other flexible working practices such as part-time or seasonal work, can be especially valuable in coping with peaks and troughs in demand.

Flexible response to demand

There are also examples of organisations taking advantage of time differences to process information during the downtime of a client, such as processing data in the UK or Ireland for US organisations while America sleeps. Similarly, a transatlantic network of call-centres, as operated by some airlines, ensures that the company is able to maintain a 24-hour service for its customers without making its staff work unsociable hours.
Another application is the ability to bring in a contingent workforce of home-based employees "down the wire" and at short notice. This approach can be used to keep call-centre response times short, without incurring high staff and facilities overheads. A combination of flexible contracts such as zero hours or annualised hours, and flexible location can be involved in such instances.

**Making mobile employees more effective**

According to the Labour Force Survey in Spring 2000, there were 1.6 million workers in the UK who described themselves as “working at home” or “with home as a base”. Many of these will be "class size zero enterprises", for example plumbers or carpenters selling their services as labour-only subcontractors. It is increasingly rare to find such people without a mobile phone. Furthermore, it is becoming quite common for them to possess PCs or palmtop organisers.

The same is true for sales representatives, although in most cases, they will be employees rather than self-employed. The advantage that access to information and communication technologies gives such people, is that they can reduce the number of trips to base, and therefore spend more time working at sites, making client visits and arranging new business while away on current projects.

**Touchdown sites**

One way of making mobile or home-based teleworking a practical option is by creating "touchdown sites". Essentially, touchdown sites enable location-flexible employees to drop-in and have access to corporate systems or specialist facilities, meeting rooms, secretarial services, and so on. They can be based at an organisation’s own premises and this is, by far, the most common approach. However, they can also be at third party premises, and this second approach delivers most benefit if it is accompanied by a significant reduction in property.

**Making effective use of space**

The term "hot-desking" has acquired a negative image, largely because of some poorly devised implementations that have been well publicised. The underlying idea is that “personal space” is replaced by “team space”. Crucially, hot-desking is not a question of reducing space, but tailoring facilities to modern work practices and processes. When implemented well, it can reduce facilities costs and provide staff with a better working environment. Best practice implementations offer a variety of work-settings optimised for different tasks.
There are a variety of hardware solutions for touchdown sites and hot-desking areas, for example the use of mobile PCs and docking stations coupled with “follow me” telephony. In this way the concept of working “any time, anywhere” becomes seamless and practicable.

**Remote diagnostics and monitoring**
One aspect of teleworking, which gains relatively little attention, is that of remote diagnostics or monitoring. There are significant gains to be made in being able to undertake such operations from a variety of less expensive locations and by reducing the need to travel. One example is Closed Circuit TV (CCTV) monitoring. It is ironic, however, that employees undertaking CCTV monitoring for crime prevention in urban centres are typically housed in expensive city centre office accommodation.

There are other examples. For instance, a rail company accepts dated video evidence as proof of work completed by contractors. Similarly, insurance loss adjusters might use remote video in assessing claims, helping to increase their productivity and streamline the claims process. Also, remote medical diagnosis can allow specialists to be “brought in” for their advice, potentially from anywhere in the world.

**Connecting all employees**
The challenge for many organisations is to increase the efficiency of their employees or contractors by effectively linking them to their information and communications networks – wherever they are. This adds to efficiency and productivity, improving service to customers, reducing the need for travel and reducing delays caused by the need for further information or for decisions.

**REASONS FOR INTRODUCING NEW WAYS OF WORKING**
**Benefits for all!**
As this Toshiba Guide has already indicated, there is a wide range of benefits to be gained from introducing flexible working. The following summary outlines where organisations should be setting their sights.

**Employers**
Employers gain from the cost, productivity, quality and customer service benefits that flexible working can bring. They also gain from a more motivated workforce, from increased flexibility of resources and from improved staff recruitment and retention.
Employees and families
Introducing flexibility, both in terms of location and hours worked, can bring benefits to employees and contractors, as well as to the organisation. Avoidance of stressful commute journeys, better integration of home and work life, dovetailing work and caring responsibilities, and remote access to work for people with illnesses or disabilities are among the advantages.

Social and environmental gains
Finally, regions, communities and the environment can benefit as well. Work can be moved into areas of need, and communities can be revitalised as local employment is created. As travel requirements are reduced and demand for city offices declines, air quality will improve, energy consumption will decline and land-take for offices will diminish.

Too good to be true?
We are only at the beginning of the Information Age, where mobility of information is taking over from mobility of goods and people as the new driving force for economic growth. (see diagram).

There is little doubt that technology is changing the way we do business. Yet, in spite of huge investments in information and communications technology, most organisations still organise their work as if the Information Age is not actually happening.

In our experience, those who seize the opportunities of technology and take a holistic approach to flexible working, can deliver benefits all round. Thoroughly implemented, there are no losers – except perhaps transport operators, paper manufacturers, office developers and those who service the “Old Economy”.

An appreciation of the potential benefits should provide the basis for setting robust and practical targets for change, based on the particular context of individual organisations. Electronic companies like Toshiba have a broader palette of products and solutions to draw from than a “PC” manufacturer. Toshiba covers portables, desktops and servers.
Add to this, cameras, projectors and telephone switching systems and very soon it becomes apparent that you could actually equip an office unit from one manufacturer.

**FACTS AND FIGURES**

A picture is emerging from government data and other surveys of the growth of new patterns in flexible location work:

**UK data**

According to the Labour Force Survey, Spring 2000:

- There are now around 477,000 office-based employees in the UK using information and communications technology to work at home at least one day a week
- Around 805,000 other people in the UK (employees and self-employed) can be classified as home-based mobile employees, making extensive use of information and communications technologies
- There are around 312,000 people working mainly from home, making extensive use of information and communications technologies
- This total of around 1.6m, i.e. 5.8% of the workforce, is believed to be growing by between 20% and 45% per year

These figures exclude self-employed people, such as plumbers, electricians and carpenters, many of whom use mobile phones to keep in touch and computers for quotations and accounts.

According to data from the Centre for Labour Market Studies, 2000:

- The numbers working ‘mainly’ at home have risen dramatically over the 1981 to 1998 period – increasing from 345,920 (1.5%) in 1981 to 680,612 (2.5%) in 1998.
- Those working at home for at least one day a week (“partially”) account for 3.5% of the employed workforce (or 932,364 individuals), while those reporting working ‘sometimes’ at home, account for a further 22%. In total, therefore, around a quarter of the UK workforce now carries out some of their work at home.
According to the European ECATT (Electronic Commerce and Telework Trends) Project (1999):

- In the UK, there are 1.27 million regular teleworkers (4.8% of the workforce) plus a further 750,000 “supplementary” teleworkers – that is people who do not usually work whole days at work, but do extra telework from home in addition to regular work at a central workplace. That makes some 7.6% of the workforce who include teleworking in their repertoire.

- Of 9 million European teleworkers identified by ECATT, 2.9 million are regular home-based teleworkers, 2.3 million are mobile teleworkers, 1.4 million are self-employed teleworkers working in SOHOs and 3 million are supplementary teleworkers.

Projections from the ECATT Project indicate that the numbers of teleworkers in the UK will rise from the current 7.6% to 11.7% of the workforce by 2005. The European average is projected to rise from 6.1% to 10.8%.

Finally, according to Gartner Group, 1999:

- Once the technology and infrastructure barriers fall, the market will explode, with 137 million teleworkers worldwide by 2003, including 30% of the US workforce.

There is every sign that current trends will continue. By the end of 2002, the UK market for "mobile, flexible and location-independent workers" is expected to be around 3 million individuals, spending over £1.5 billion per year on their laptop and desktop PCs and associated equipment and services.

**Following the US lead**

While the UK is relatively advanced in its adoption of “wired working” in European terms, we lag some way behind the Nordic countries and the US. But the signs are, where the US goes, the UK follows.

According to the 1999 "Telework America" Survey, there were over 20 million teleworkers in the USA at the end of the year – a 20% increase on the previous year. The survey showed a further 10 million would like to work for some of their time at home, but felt their employer would not allow it.
The survey examined a range of other issues, including how teleworkers handled work-life conflict issues. 80% of teleworkers indicated they were able to accommodate activities, such as visits to the doctor, that would normally require time off work.

The average cost benefit to employers enabling teleworking was estimated as US$12,000 per employee, per year. Other figures included an annual saving of 2,880 km commute miles per employee.

One key US trend over the past 10 years has been the development of the “home office” (or SOHO – Small Office/Home Office) and an accompanying market for products. With home PCs outselling new televisions for the past three years, people’s ability to work from home is increasing, even if those who do so are in a minority. Over 50% of US households now have some form of home office.

**Teleworking development in the UK**

One of the most recent and rigorous surveys, Teleworking Britain by Mitel, published in 1998, found that almost 30% of “knowledge workers” are already teleworking full-time or part-time - translating to about 5.1% of the workforce. This indicates a rise from the 4% found in the Spring 1997 Labour Force Survey.

High levels of interest were also shown in teleworking. 40% of men and 30% of women said they would like to telework. The major obstacle identified was lack of company policy on teleworking, coupled with technologies, processes and cultures that make it difficult. Over the next few years, we can anticipate more organisations developing policies for teleworking, and opening the door to a sizeable increase in uptake.

**FUTURE DEVELOPMENTS**

**More bandwidth**

Held back by technical limitations, high costs and a lack of competition in the telecommunications industry, a massive increase in bandwidth is about to be launched in the UK, with unit costs continuing to fall.

Whilst large organisations have had access to high bandwidth, wide area data communications for some time, small businesses and home workers have had to make do with low-speed modems, ISDN lines and high connection charges. The advent of high-speed ADSL services, unmetered Internet access and new services from cable companies will begin to change this.
Wireless world
The last decade has witnessed a resurgence in radio technology and the growth of the mobile telephony market. Current systems can be used for slow speed communications, for example e-mail, but are of limited use for Internet browsing and more demanding applications. Also, connection costs can be very high. Nevertheless, even with its limitations, a mobile PC with a digital mobile telephone interface is a remarkably powerful and versatile tool for "anywhere/anytime" computing and communications.

Next generation mobile systems, known as 3G, will offer much higher bandwidth. As well as enabling the mobile PC to be just as connected and functional as the desktop PC, it will spawn a new generation of portable multimedia communications devices.

WiFi and Bluetooth™ (see glossary) will be the main players in this arena. WiFi is the direct replacement for the current 10MB cabled network but without the expense and inconvenience of cables. Bluetooth, however, could be described as a replacement for ‘short’ cables and removable ‘media’ The result is that the PC is no longer ‘just’ a computer. Add a modem, and it becomes a communications platform. Add a camera, and it becomes an editing machine, and so on. It can be continually modified by the addition and removal of devices - all without the need for cables.

Where has all the paper gone?
Working away from the office is of limited benefit if information is still stored in filing cabinets, and business processes and communications remain paper-based.

The paperless office has been predicted for some time, yet paper continues to be generated – and destroyed – at a faster rate than ever before. While hard to achieve, the concept of being "paper-free" is an important aspiration, and one that needs to guide the implementation of new business processes and new ways of working.

Structured business environments such as call-centres are almost already paper-free zones. The investments being made by most large organisations in e-business, process re-engineering and knowledge systems, will bring the benefits of paper-free working to most job functions.
Power to the people

It is a well-worn cliché that today’s mobile PC packs in more computing power than a multi-million mainframe did just 20 years ago. "Moore's Law", which states that computing "bangs-per-buck" double every eighteen months, shows no sign of slowing down, and nowhere will this be more apparent than in portable systems.

In practice, this means that computing-intensive applications such as speech and image recognition, natural language processing and massive multimedia databases, will migrate out of the corporate environment to individual desktops and notebooks.

A major step change will arrive when the computer becomes a more “active” platform. At that stage, it will begin to use its power to tell you in a synthesised voice that you have e-mail – it will even read the e-mail to you. It will recognise your voice and respond to you. It will evolve into a “companion” device (perhaps supported by mobile network profiles – wherever you log-on, you get “your” desktop.)

The network is the office

There are signs that the traditional office may have a limited life. In the same way that people are moving out of the office to work more flexibly, systems are moving away from corporate servers to the Internet. Massive "server farms", run by third party specialists and with thousands of servers, are being established at secure facilities, connected to the Internet "backbone". Corporate applications are transferring to these servers, and the Internet is being used as a channel for secure internal communications as well as a public network.

Telephony is also starting to move to the Internet, which is rapidly becoming the universal and ubiquitous communications environment.

With filing cabinets, staff, telephone systems and servers gone, the office becomes a place for support and personal networking, necessitating a radically different approach.

Information across boundaries

The development of seamless and transparent electronic processes poses a challenge to traditional ways of working. One possible goal is to reach a situation where anyone with a stake in the information, including customers, can be given access to it so that they can monitor the progress of their project or transaction, and work on it. Given access rights, individuals or organisations located anywhere can be involved in every step of the process – there is no need to make a visit or to wait for the post.
In fact, this is already happening. Once you have the right infrastructure to support your method of working, it truly doesn’t matter where you are. Even if you have no worldwide structure. The Internet can be used to create the connections you need, for example via a Virtual Private Network (VPN). A VPN allows a user to pass & receive information via a secure network across the Internet.

Information does not need to be constrained by national or international boundaries. It costs little more to telework from the other side of the world than just around the corner - it might well cost less. Many forward-thinking employers are starting to exploit this.

**Impact of video in new media**

With low-cost digital cameras and editing equipment developing so rapidly, video in the workplace is likely to become much more commonplace. Already, video is used quite extensively for training purposes. Increasingly, it will be used for internal communications, with applications that include employee communications (a stage on from the company newsletter), presentations, marketing, and analysis. Clearly, skills in working with video and new media – both technical and presentational – will become important.

The ability to use networked video will add new dimensions to location flexibility. As expensive video conferencing suites are replaced by cheaper desktop systems, online meetings will become viable, functional and attractive.

**Changing roles**

Key role changes, which arise from moves to technology mediated working, include:

- A shift in the secretarial/clerical role to what is sometimes called a “hub” role. The new focus revolves around managing a “hot-desked” environment, keeping track of the work and whereabouts of a dispersed workforce, and being central to communications – rather than long hours of typing and filing

- A shift to a more self-sufficient role for service delivery employees. They will do more of their own word-processing and electronic filing, with email communication increasingly replacing memos and letters

- Consequent changes in the manager’s or supervisor’s role. There is a need for more formal and regular communication, to “walk-the-job electronically”. Managers of a formerly geographically concentrated workforce lose the imperative to be centrally located themselves. Managers of already dispersed workforces can reduce their own need to travel and that of their staff by substituting more frequent electronic communication
Clearly, the key objectives for managers are:

- To realise the cost savings and productivity benefits which effective use of technology allows
- To learn to direct, encourage and support a workforce that is geographically dispersed

These objectives can only be reached with a good understanding of what can be done. The following chapters outline the way forward, starting from an introduction to what is possible, moving through more in-depth guidance and then on to the practicalities of implementation.
A strategy for working in the information age
To most employers, in both the private and public sectors, better business performance will be the main driver for change. In essence, this means improving efficiency and effectiveness:

- Improving efficiency implies doing more for less – a combination of increasing output and reducing costs
- Improving effectiveness implies doing a better or more relevant job

New ways of working can have a significant impact in both of these dimensions.

This chapter discusses the key areas of performance improvement and is intended to provide a strategic framework for managers setting out on a programme.

**STRATEGIC FRAMEWORK**

By bringing together technology, processes, working practices, facilities, cultural innovations and developments around an integrated and focused programme, most organisations can deliver a number of measurable benefits. This is illustrated in the chart below:

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<th>Areas of activity</th>
<th>Integrated change programme</th>
<th>Improvements</th>
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<tr>
<td><strong>Facilities:</strong> Office and &quot;away from the office&quot; facilities</td>
<td></td>
<td>• Effective and efficient service delivery</td>
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<tr>
<td><strong>Technology:</strong> Infrastructure and applications, business processes and communications</td>
<td></td>
<td>• Low operating and administrative costs</td>
</tr>
<tr>
<td><strong>The Human Factor:</strong> Organisation, management methods, working practices, skills and HR policies</td>
<td></td>
<td>• High business efficiency and team/ personal productivity</td>
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<tr>
<td></td>
<td>are jointly optimised for</td>
<td>• High staff motivation and retention</td>
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<tr>
<td></td>
<td></td>
<td>• Equal opportunities, environmental and social sustainability</td>
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The following sections expand on this concept. In practice, what it means is that those responsible for facilities, technology, business processes and human resources need to work together to a common agenda. This agenda can include, not only business benefits, but environmental and social benefits as well.

FACILITIES FOR WORK

Many office-based organisations seem to suffer from a common paradox – apparently inadequate office space and facilities, yet low building utilisation. The main reason for this is that offices are designed as if every employee were always there, rather than being tailored to match actual working practices.

Today, office facilities extend beyond the corporate office environment. They are to be found wherever work is being undertaken for the organisation. Using new technologies, it is becoming easier to widen the concept of facilities management towards the needs of employees, wherever they are. Essentially, the aim is to achieve “facilities flexibility”, which is necessary to support flexible working. But this can only be arrived at if technology, processes, management and human resource issues are addressed at the same time.

Property and facility cost savings, or new cost avoidance, are often important drivers for achieving this and are critical to building the business case in order to move forward.

Corporate offices

Offices will not disappear, but their function will evolve.

The new approach to providing central office facilities involves:

- Emphasis on getting the work done, rather than providing personal facilities
- More shared and fewer private facilities and support services
- Greater space and staff flexibility, for example temporary co-location of project teams
• Paperwork elimination or reduction through process streamlining and electronic communications
  • New work settings to enhance communications and productivity, such as in-work cafés, soft seating, flexible meeting rooms, study areas, retreats, training and development resource centres
  • Touchdown facilities for regional and other staff without personal desks or services
  • The ability of management to implement the complete change, rather than implementing 50% and expecting it to achieve a 100% solution. There are no shortcuts

The necessary redesign of premises is not purely a facilities issue. It involves technology and process improvements, and a high degree of staff consultation and involvement, leading to the development of new workstyles and the policies to support them.

The office at home
As suggested in chapter 1, working at home covers a wide range of arrangements, both formal and informal. At one extreme, is the executive or professional who occasionally works at home - often out of "normal" working hours. At the other extreme, are people who work full-time from a home office. In between are home-based mobile employees and those who split their time flexibly between home and the office.

As with home working, there are different types of mobile employees, with varying requirements. Some jobs are inherently field-based, with the majority of time spent with clients or on the road. Others are more intermittent, as with executives who spend a lot of time travelling, or consultants who work for a variety of clients.

Developing a strategy for employee working from home, requires a clear understanding of working practices and travel behaviour. The aim has to be to increase work effectiveness and reduce non-productive travelling time. Working at home, other than on an occasional basis, requires a range of issues to be carefully considered. These include technology (telephony and IT) insurance, furniture, health and safety, taxation, integration with colleagues and effective supervision.
Offices on the move
While many flexible, mobile and location-independent employees are adept at "camping out" in a variety of locations, including hotel lobbies, motorway service stations and airport lounges, new types of working environments are emerging.

• “Touchdown" centres are being set up in organisations with distributed operations, allowing mobile or visiting staff to use a desk, PC and phone on a temporary basis
• Business centres are being used to provide flexible serviced office space to organisations whose needs may be only temporary, or who wish to outsource facility provision and management to a third party. Some of these are now catering for flexible workers who need "facilities on demand"

WiFi will probably become the ubiquitous standard, as it ties into networks regardless of location within a physical site. A mobile worker, on visiting a customer site may be given limited access to their network via a “Guest” logon. This will allow secure access to the Internet, thence to the office and email. The customer site provides a service to the guest worker. In an engineers case, this may speed access to device drivers and up-to-date fix information. For a salesperson this will allow current pricing and availability to be readily available.

Once again, to develop a strategy, it is imperative for organisations to understand where employees can work most effectively, and to create the facilities and infrastructure to enable them to do so.

Facilities such as touchdown centres or business centres will also require the development of policies and protocols covering issues such as health and safety, equipment and information security, booking of facilities, communication with colleagues and supervision.

Many needs, many solutions
In specifying new facilities, there is sometimes a tendency to assume that "one size fits all", whether applied to office, home or mobile workers. Such an approach often leads to nobody being satisfied. Clearly, different types of work need different solutions. Also, many people
have requirements that change during the working day: formal meetings, communicating by phone, concentrated study and relaxed discussion, for example. Facilities development must reflect the differing tasks, needs and work styles, appropriate to each individual organisation.

Facilities and office redesign issues are examined in greater detail in chapter 3.

TECHNOLOGY AND PROCESSES

The underlying infrastructure of technology and processes must be sound if more flexible working methods are to succeed.

Those responsible for technology and processes need to be aware that in the future, staff need to have the ability to work anywhere. Otherwise, they may specify solutions that will only work in the office. The costs of getting it right at the outset are low, but the costs of putting it right later on can be prohibitive.

Technology infrastructure

The technologies for new ways of working are based around networked computer and phone systems, and could include some or all of the following:

- A standard and location-independent IT and telephony "desktop" that allows users to work anywhere
- Full integration of remote employees (home, on-site and mobile) into corporate systems and processes
- Information stored electronically and on servers, rather than on paper and personal workstations
- A single, well-integrated messaging system (email, voice mail, etc.)
- Support for desktop video conferencing and group working
- Support for paperless working and knowledge management
- Applications delivered to the desktop using Intranet technology

Most large and medium-sized employers have already made substantial investments in their electronic data and voice infrastructures. However, for many, these investments have generally failed to deliver the expected payback. The solution is often not to invest in more technology, but to use technology wisely to transform the ways in which work is done.

Strategic priorities are crucial in this regard. An IT department may devise an IT and telecomms roll-out which, in pure technical terms, may be entirely logical. But does it address the business objectives of the organisation? And, in practice, does it block the
introduction of more effective working practices? Plans for infrastructure development must be integrated with strategy for introducing new ways of working.

**Business processes and working practices**

Transforming working practices cannot be separated from the improvement of business processes. Process improvement – or transformation/redesign/re-engineering – should bring together a number of business concepts that conventionally, have been pursued independently:

- Process innovation - not being bound by traditional ways of doing things
- Organisation for success – restructuring the organisation around outputs rather than control
- Streamlining and automation – removing unnecessary activities, eliminating paper and making the most of technology
- Full integration of business processes with corporate IT systems

Most organisations have invested in and developed their mainstream business processes and systems, including finance, assets and payroll. In many cases, this was as a result of the "Millennium threat", which has obviously now passed. Many have probably paid less attention to "re-engineering" internal processes and working practices.

Particular areas for attention can often include:

- Communications and information sharing, both internally and with business partners
- Paperwork reduction – it is surprising how much paper still finds its way into modern office environments
- Integration and support of staff that work away from the office, such as sales and maintenance staff
- Reduction in business travel, especially to internal meetings

The introduction of new ways of working without a thorough audit and improvement of business processes will fail to maximise the potential benefits. Transferring archaic processes online or duplicating processes to serve remotely based staff will build in inefficiencies at the outset.

The goal should be to integrate new working practices in an online environment linking staff, suppliers and customers to facilitate ease of communication and effective service delivery.
Technology and process issues are examined in depth in chapter 4.

**ORGANISATION AND PEOPLE**

New ways of working need to be introduced alongside organisational and cultural developments in order to deliver their full range of benefits.

**Organisation and culture**

Surveys have repeatedly demonstrated that the main obstacle to introducing innovative working practices is organisational culture. Typically, organisations have traditional "ways of doing things" and an internal "sense of self", and these underpin decisions and policies. The prevailing culture may be embedded in systems and hierarchies, but it is often also embedded in mentalities. Even organisations that may be highly innovative in some respects, for example in product development, may experience intense rearguard action when it comes to reforming internal processes and work styles.

As a result, developing the strategy may also involve a programme of cultural change and awareness raising.

Typically, issues which need to be addressed, include:

- Supervision and trust – how to manage employees who are physically present less often, and how to assess staff by outputs more than by hours spent in the premises
- Moving information out of private domains (the manager's pending tray) into areas accessible by all relevant staff
- Reviewing the impact of status on processes and facilities

The application of networked information technology can also support the development of a learning culture. In turn, this can support the effective and efficient use of technology. A big issue, however, is that many organisations invest heavily in facilities, IT and processes, then wonder why they have spent so much for so little in the way of benefit.
People
Organisations depend on people. It is through people, at all levels, that success can be delivered.

With a strategy for flexible working, it is essential to involve staff from the outset. This not only helps dispel mistrust, but contributes firstly, to raising awareness about the possibilities, and secondly, to a greater likelihood of success when it comes to policy formation and detail of implementation. Often, it is people on the front line who have the most realistic assessment of what works and what does not. You'll hear how dreadful the present information system is from those who actually operate it, rather than from the team who are trying to give all systems a web interface.

Many personnel issues are also raised by the introduction of new ways of working, from contractual and training issues, to concerns about changing work environments.

The ways in which flexible working can enhance recruitment and retention of staff should be included in the strategy. Many potentially excellent employees are effectively excluded from the workplace by a combination of factors that make it difficult for them to commute to a "regular job". These include those with caring responsibilities for children or elderly relatives, disabled people and those who have moved away, for example, because of their spouse's job.

In fact, many people struggle to balance their work and home lives, and a little more flexibility in this regard could benefit many people, whilst at the same time, increasing efficiency and flexibility. To many employees, the working environment, conditions and culture are just as important as pay in their selection of employer.

This is not just an equal opportunities issue. With skill shortages reported in many sectors, widening the net of people who can be employed makes good business sense.

Organisational and cultural issues and the critical "human factor" are examined in depth in chapter 5.

RESPONSIBLE WORKING
A strategy for new ways of working should also integrate the concept of “responsible working” – that is seeing how the pursuit of business excellence can also achieve social and environmental benefits. Such an approach may:
• Achieve benefits for staff in their working conditions, boosting morale and company loyalty
• Increase the organisation’s attractiveness as an employer
• Address regulatory requirements, such as planning conditions imposed by a local authority to reduce staff travel via a company travel plan
• Enhance the image and reputation of the organisation, which may have a marketing payback

Environmental responsibility
New ways of working can contribute directly to an employer’s environmental policies in the following ways:
• Internal and external paper reduction, through electronic communications
• Business-related transport reduction (commuting and in-work) through local working, home-based working, electronic access to files, etc.
• Per-employee energy reduction, through better space utilisation

Public sector organisations, especially local authorities with transport responsibilities, have a double interest in the environmental benefits, as they are charged with implementing government policies regarding green transport planning and Local Agenda 21. Setting an example in these areas to other employers is vital.

Social responsibility
Good employers must also consider issues of social sustainability. As well as supporting equal opportunities, new ways of working can help sustain local economies by locating work in areas of employment need, for example rural communities and post-industrial towns.

Locating work in such areas may have financial advantages due to lower property and labour costs, and availability of grants and other incentives from government for relocation.

Equal opportunities and social responsibility are examined in depth in chapter 6, environmental considerations in chapter 7 and regeneration in chapter 8.
BRINGING IT TOGETHER: SUCCESSFUL IMPLEMENTATION

There have already been several attempts in the public and private sectors to benefit from new ways of working along the lines outlined in this section. Those that have been most successful have taken a radical and integrated approach, proving that bringing together property/facilities, technology/processes and organisational/people teams around a shared agenda of simultaneous efficiency and service improvement is the key.

The following chart illustrates the breadth of approach and some of the issues and tasks typically involved.
Chapter 3
Facilities for work
This chapter is aimed at facility managers, architects, designers and those responsible for providing buildings, interiors and other work facilities.

It looks, not only at the central corporate office, but also the "extended office". Now that the boundaries have shifted, facilities development has to take account of this.

The chapter is not intended as a substitute for existing specialist guides and resources in the field. Instead, it seeks to provide additional information and advice on specific issues around facilities for flexible working.

As already stressed in chapter 1, facilities should be developed as part of an integrated programme, along with technology, process, organisation and people issues.

**WHY DO WE HAVE OFFICES?**

**Paper factories**
The office is a place for administration of organisations. For many centuries, the main technology has been, and in many organisations remains, paper and ink. Paper provides an information medium that is easy to write to, store on, replicate and read from. It is used to communicate internally – between colleagues and departments – and externally – with suppliers, customers, shareholders and authorities.

Traditionally, offices are located in convenient locations for physical communications – paper and face-to-face meetings. The business areas of cities have developed around this need.

**Office design**
Today, organisations can use a complete array of information and communications technologies that were not available to their predecessors. Paper, packages and people can be delivered to the other end of the county, country or even the world – within a day. Paper can be faxed instantly. Electronic information can be exchanged immediately. Documents can be copied in seconds. The telephone has reduced the need for face-to-face contact.

Yet, in spite of these developments, the office design has remained relatively unchanged. Florence’s Uffizzi municipal administration building, which was completed in 1571, is a case in point. It bears a remarkable similarity to many corporate offices of today – apart from its aesthetic quality, of course!
The halfway house

Since the invention of the telegraph, communications have had the potential for "dematerialisation" of information, at least for part of the process. The process can be represented like this:

<table>
<thead>
<tr>
<th>origination</th>
<th>dematerialisation</th>
<th>rematerialisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hard Copy</td>
<td></td>
<td>Hard Copy</td>
</tr>
</tbody>
</table>

The telegraph, and later the telephone and wireless communications, replaced the long distance courier. But at both ends of the process, physical communication on paper remained a necessity.

This model of communication still largely persists in the Information Age. Computers act as terminals for sending and receiving information, but at either end, they pump out piles of paper, which is shared between employees, then later stored. The effect of this process on office design is crucial – but it need not be so. Most information need never be printed. Instead, it can be shared far more efficiently and effectively on electronic networks. Once this principle is accepted, and organisations move out of the communications "halfway house", exciting possibilities open up for innovative office redesign.

The cost of offices

There are over 10 million office employees in the UK. They work in over 200 million square metres of office space, representing a capital investment of more than £120 billion. The basic occupancy cost of this space is about £10 billion per annum, with rates, furniture, service charges, security and facilities management increasing this figure to around £30 billion per annum.
And yet, the average occupancy of an office desk is often less than 30% of the working day – and less than 10% if you take non-working hours into account.

Typically, the greatest amount of space is allocated to senior staff who are often absent, while the least amount of space is given to junior and support staff who are always there. Furthermore, senior staff tend to get premium quality space, whilst junior and support staff end up with poorer space.

Ranging from £1,500 to £15,000 per annum for each staff member, premises costs are the largest item in many organisations’ budgets after employment costs.

**TODAY’S OFFICE ENVIRONMENT**

**Meeting the new demands**

The changing need for office property is being heavily influenced by the universal adoption of information and communications technology:

- The vast array of mains and signal cables needs to be managed
- Extra heat from the equipment needs to be controlled or removed
- There are new health and safety risks, including electrical hazards, sitting positions, eyestrain, lack of breaks and RSI (Repetitive Strain Injury)
- Information security needs to be considered amongst other security needs
- Constantly changing businesses and processes demand flexible accommodation

Older buildings and older furniture are increasingly difficult to use effectively, and costs of adaptation are being driven higher and higher. Organisations are seeking to escape from long leases on older buildings, either moving into newly built offices or entering into agreements to strip and refurbish, or in the extreme, demolish and rebuild.

**How big?**

Continuous changes in technology, processes and working methods, combined with the competitive environment, make it virtually impossible for organisations to predict with any certainty how large their operations will become. This makes it equally difficult to forecast
their property needs a few years ahead, let alone over the 25 years of a typical business lease. A building that may be the optimum size when specified will inevitably be the wrong size when occupied.

This has added to the demand for modern, flexible space on short-term leases, fuelling the success of the business centre sector.

**Cabling**
The need to route power, telephone, and data cabling to every workstation puts a severe strain on the hidden ducting in buildings. Pressure to move people in response to change increases that strain. To ease the burden, various techniques have been adopted, including structured or flood wiring, cordless telephones, and wireless data networks.

The way in which workstations are placed, and the consequent capacity (efficiency) of the building, are also determined by the structure. Again, various techniques are employed to minimise rigidity and loss of space. These include peripheral, ceiling or floor fed wiring, with wiring cabinets on each floor.

**Furniture**
Technology also has an impact on furniture. It is unlikely that a building will be able to support wiring at any random point where a desk might be placed. As a result, the furniture has a role in distributing the wiring from the nearest point to desks in the cluster.

Furniture should also provide noise attenuation and visual barriers, and support the safe working environment demanded by health and safety regulations.

With the introduction of Bluetooth™ and WiFi, these considerations will become of less consequence over time.

**Cellular or open plan**
Debating the merits and disadvantages of cellular and open plan offices is guaranteed to inflame passions in many organisations. Cellular offices allow for a high level of concentration and privacy. Open plan environments are more flexible in coping with changing demand, and support better communications and team working, but they can be more distracting to work in.

Many organisations operate a mixed environment, with large, smart cellular offices for executives (who may rarely be there) and open plan offices for everyone else.
Heat, light and sound
The best modern buildings incorporate zoned temperature and air quality control, natural lighting and good sound insulation. Unfortunately, this all comes at a price that many employers are not prepared to pay, and most people end up working in office environments that are sub-standard in some way.

Support
There is a difference between the highly structured working environment of the telephone call-centre or forms processing unit, and the less structured approach of the general office. In the former, jobs, work processes and work-flow are more clearly defined. In the latter, they are less so, and there is usually the need for support in the form of administrative assistants, secretaries and personal assistants.

In spite of the technology-enabled “de-skilling” of many office functions, including document preparation, communications, information filing and retrieval, we are seeing many office practices and roles remain much as they were before the advent of information and communications technologies.

PLANNING FOR THE FUTURE
Space planning
Today, a new egalitarianism is starting to permeate many forward-thinking organisations. The idea is that the main determinant of size, type and quality of workspace should be the facilities that are required to get the job done – rather than status.

This approach also slashes the costs associated with moving people around or promoting them. For many organisations, gone are the days when a promotion automatically meant a plusher office, thicker carpet, bigger desk and a personal secretary.
Sharing

Almost as emotive as the open-plan office, is the "hot-desk". The idea is that in an IT-based working environment, all desks are equal. The number of desks required is equal to the maximum number of staff likely to be in at one time. This is usually far less than the total number. Although normally associated with open plan working, hot-desks can also be located in small, cellular offices.

Hot-desking often goes hand-in-hand with telecommuting and mobile working, enabling people to work in a wide range of locations.

Good schemes involve staff at all levels. They also utilise some of the space benefits derived from hot-desking to provide improved shared facilities, such as cafés, meeting rooms and resource centres.

Support services

Traditionally, demarcation has been associated with factories and is now considered a thing of the past. Ironically, it is only just being addressed in offices. The days of separate reception, booking, telephone, porter, post, security, and maintenance staff are disappearing in favour of a multi-skilled group who cover for each other and provide a single point of contact for all administration and support services.

Individual secretaries are becoming team supporters, and are themselves working in teams to cover multiple groups. The differences between the role of secretary and administrator are blurring. Increasingly, they are able to cover for each other, providing a better service for more people with fewer staff. All this is important as the proportion of space changes from owned to shared.

Reducing the need for centralisation

There was a time when large offices enjoyed economies of scale, especially around the deployment of technology.

However, the centralisation of facilities is now no longer determined by technology, and whilst there may be other operational and communications reasons to have all staff working in the same building, there are several disadvantages. These include transport disruption and power failure, difficulty in getting access to an adequate labour pool and environmental impact.
Location
By definition, technology-supported, location-independent working can be carried out anywhere there is a connection to voice and data networks. Locating work in or near residential communities reduces travel and property costs, and increases workforce flexibility. It can also help regenerate local services such as shops, pubs and post-offices.

Local, community-based offices, serving one or several "clients", can house customer service call-centres, business administration departments and information processing staff. They can also provide facilities for mobile workers and telecommuting executives, instead of or complementing facilities at home.

Paper
C. Northcote Parkinson's Law that work expands to fill the time available, is also true of paper.

Filing cabinets will always be full. Photocopiers and printers will always operate to capacity. So, naturally, facility managers will often be under pressure to provide more storage and faster copiers. Unwittingly, they can compound the problem by negotiating contracts that minimise the direct costs of paper generation and storage.

However, as groupware and knowledge management technologies are introduced, business processes are re-engineered, and staff are trained, paper will at last start to disappear. Already, paper plays a diminishing role in many organisations, and some offices, such as call-centres, are already largely paper-free.

Anywhere, anytime
Two features of the reduced-paper, IT-based working environment are that the office can be anywhere there is access to a network, and a growing proportion of work can be done at any time.

Consideration should be given to the impact this has on support services, which are increasingly expected to function outside "normal" working hours.

Third party facilities
Extending the concepts of flexible work-space and shared facilities, a new trend is emerging: the use of third-party space.

Serviced offices have been available for some time, offering flexible access to desks, offices, meeting rooms and support services. Telecentres take this idea one stage further,
and provide a technology-rich environment with access to the public telephone network, Internet and corporate systems.

Other third-party working environments include client offices, cybercafés, roadside services, hotels and trains. Clearly, mobile technology such as portable phones, mobile PCs and digital mobile networks, has greatly enhanced the effectiveness of some of these work locations.

**Working away from the office**

Working from home or within a mobile environment is best if it is offered to staff as an option within a flexible location-independent working policy, and if it is justified by reduced travel, better balance between work and home, and lower corporate office costs. Few staff are happy to forgo all social contact and work full-time in this way. However, part-time work and/or the option of locational flexibility are becoming increasingly common.

An attractive way to envisage the "office away from the office" is that the corporate desk is simply "stretched" to the remote location, with all services working as they would in the office. In practice, of course, this concept usually has to be compromised in some way.

**SPECIFYING THE OFFICE**

In most cases, the basic requirements for office space are the same – high quality, well-lit, well-ventilated, fully temperature-controlled, flexible, re-configurable, secure and fully wired for IT and telephony. Beyond that, each situation is different, and of course, dedicated facilities such as call-centres have specialist requirements.

Yet, despite differing or specialist requirements, most general offices with mixed usage can be configured from a series of building blocks, as outlined below.

<table>
<thead>
<tr>
<th>Model</th>
<th>Interaction</th>
<th>Autonomy</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hive</td>
<td>Low</td>
<td>Low</td>
<td>Routine process work, e.g. data entry, call centres</td>
</tr>
<tr>
<td>Cell</td>
<td>Low</td>
<td>High</td>
<td>Concentrated professional work, e.g. accountants</td>
</tr>
<tr>
<td>Den</td>
<td>High</td>
<td>Low</td>
<td>Busy team work, e.g. media production</td>
</tr>
<tr>
<td>Club</td>
<td>High</td>
<td>High</td>
<td>Knowledge work, e.g. IT, consultancy</td>
</tr>
</tbody>
</table>
Understanding needs

A key function in specifying office requirements is to analyse the variety of ways in which different roles and tasks are carried out, and to design office space accordingly.

One analysis of the new approach identifies four space models based on the degree of autonomy and interaction:

Each of these models implies a different approach to the use of space. The trend in general offices is away from the highly structured hive (production line) and cell (quiet individual unit), towards dens (noisy open space) and clubs (a variety of work settings). In fact, whilst dens can provide a lively social environment and a high degree of face-to-face interactivity, distraction levels are often excessive. It is the technology-supported club environment that is proving most attractive. (Traditional "den" activities such as information exchange and trading no longer depend exclusively on face-to-face contact.)

The extreme concept of the club is that, apart from service staff, everyone is a "visitor", choosing a work setting that is most appropriate for that visit. This might be a hot-desk, study zone, meeting room, café, team area, or touchdown station. Whilst this may fit the requirements of some teams, others may operate best with a less extreme approach. Another concept sometimes used to good effect is that of "pitchers" and "catchers". Pitchers are out of the office much of the time, visiting for specific activities such as meetings, briefings, research and handover. Pitchers do not need personal desks, and instead use the most suitable facilities on demand. Catchers, on the other hand, are mainly office-based staff and would normally work at the same desk every day.

In a large number of offices, it is often the case that not many people are around because they are out delivering services, working with other organisations or at meetings. The average proportion of desks occupied usually varies between teams and, to some extent, within teams. By and large, the amount of space allocated should reflect the number of people likely to be present at one time rather than the total number of people in the team.
Getting the balance right
The extreme opposite of providing everyone with their own work place is a whole building hot-desking arrangement, whereby staff can be allocated a work place anywhere in the building. Such an approach, sometimes called ‘hotel ling’, is usually intensely disliked and can lead to poor morale and productivity. Most people want to meet and work with their colleagues rather than a bunch of strangers.

However, what does work well, is a combination of “centrally shared and managed facilities” and “team space”:

- “Centrally shared and managed facilities” often extend beyond the usual reception and meeting rooms to include facilities that could not be justified in any one team
- “Team space” provides identity and belonging in an appropriate "club" environment for all that team’s staff
- Allocation of space to teams, and layout of that space, should be based on usage and business need rather than total numbers and status

Finally, particular care should be taken to recruit, train and provide good facilities for permanent support staff, both central and team-based. They will play a vital role in organising and supporting those working more flexibly.

Centrally shared space
Common space, shared between teams, can include:

- Staff and visitor reception facilities
- Flexible meeting rooms, for example with folding partitions to vary room sizes and numbers
- Café facilities with mixed seating suitable for informal meetings.
- Touchdown facilities for internal and external visitors, often integrated with the café facilities
- A quiet zone, for uninterrupted study and report-writing
- Areas where paper files are retained, such as secure, high-density paper storage facilities
- Facilities for high capacity printing, copying, binding, laminating, faxing, mail receipt, distribution, franking and consumables storage, etc.
Team space

Team space can be built from the following components:

- A secretarial unit - this is the operational hub of the team space and can include local printing, copying and other facilities as well as a desk for the team secretary /administrator
- A manager desk with adjacent small table and chair
- Desks for staff allocated personal workspace
- Desks for staff sharing workspace
- A team resources area, with books, magazines and team filing, etc, plus local tea, coffee and water services
- Soft seating area around a low table
- Retreats – small cellular rooms (6 sq m) with a table and two chairs
- One or more small meeting room (10 sq m) - cellular rooms with a table and four chairs
- A team table and chairs
- Roll-away pedestals for personal storage

How much space?

Together, modern furniture, reduced paper storage demands, smaller PCs - with sizes as small as B5 within the Toshiba range (especially flat screens) and flexible buildings, allow higher densities to be achieved without undue overcrowding.

In addition, reducing the number of people allocated personal desks and increasing the proportion of shared space, will expand the population size that the building can support.

Space demands reduce further, as staff undertake more of their work away from the office.

The following chart compares the space required within a conventional office environment and a flexible office environment. Whilst there is no substitute for designing space from first principles, the indicative figures may be helpful. They are taken from an organisation with a mixture of cellular offices and open plan space, and the figures apply to middle managers and professional staff:

<table>
<thead>
<tr>
<th></th>
<th>Conventional</th>
<th>Flexible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Space allocated per desk</td>
<td>130 sq ft</td>
<td>90 sq ft</td>
</tr>
<tr>
<td>Number of staff supported by each desk</td>
<td>1.0</td>
<td>2.5*</td>
</tr>
<tr>
<td>Space allocated per person</td>
<td>130 sq ft</td>
<td>36 sq ft</td>
</tr>
</tbody>
</table>

* a desk to staff ratio of 2.5 is low; ratios up to 10 have been implemented successfully
As a rule of thumb, the most successful implementations have given back half of this saving in space to improved shared space: cafes, lounges, meeting rooms and social facilities such as gyms.

**Challenging assumptions**

In some respects, the potential of Information Age working means that all space is "up for grabs" by way of reduction or re-purposing. The completely "virtual" organisation, where there are no permanent central shared facilities, is one radical possibility, although not one that is, as yet, embraced by any large organisations.

An analysis of work styles should identify why people do what they do, and where they do it. It should also identify to what extent people work where they do out of necessity, and to what extent it is simply out of habit. The alternative scenarios can then be assessed.

One must also be ready to challenge easy assumptions. For example, it is not only field workers (or "pitchers" as referred to above) who can be set up with facilities away from the office to improve efficiency and cut down on wasteful travel. In some cases, people involved in administrative work, such as intensive data processing, may be better located remotely. In these circumstances, it might prove appropriate to consider more extreme space reduction at the central premises, with shared space tailored for team-building or training purposes.

**Interior design and furniture**

Building or refurbishment projects will normally leave a carpeted, cabled and security-lit shell, with a number of cellular spaces and other partitions. The bulk of customisation will then be carried out through furniture and design.

The latest office furniture is designed to bring even greater flexibility to the working environment:

- The heights of desks and tables can be adjusted from the sitting to the standing position
- Furniture can be rolled into different positions
- Lightweight, collapsible screens can be used to create instant meeting areas
- Ergonomics are designed to reduce back strain, RSI, eye fatigue and so on
Along with furniture, modern design and lighting concepts create a more human working environment, far removed from the prison-cell or rectangular grid models with which we are all familiar.

One complaint often levelled at schemes that reduce the amount of private space in favour of shared space, is the element of depersonalisation. Making the office more comfortable and attractive, in effect more like home, is a good way to counter this feeling.

**THE HOME OFFICE**

Specifying office facilities now embraces the extensible office - the office extended into the home or other venues.

Today, many people occasionally work at home, and a growing proportion either use their home as a base for work or work at home regularly (see chapter 1). An important and growing minority work at home full-time.

A "home office" can range from the dining room or kitchen table, to a designated room, or even special-purpose outbuilding. The constraints of home location need to be recognised - rebuild or substantial refitting are unlikely to be options! and it is vital that the home office is set up as a viable and attractive work location.

**Health and safety**

Health and safety is a priority in relation to staff working from home, and probably represents the likeliest risk in terms of employer liability and employee welfare.

Although the UK Health and Safety at Work Act is not specific about domestic premises, the employer has a statutory duty of care for employees' and contractors' health, safety and welfare wherever they are working. It is important to note that the employee also has a duty of care, subject to adequate training and support.

The main risks are in the areas of:

- Hazards in the workplace area of the home
- Hazards from equipment provided
• Use of display screen equipment
• Lighting, ventilation and heating
• Workspace and ergonomics
• Risks to third parties visiting the home for work purposes

The UK Management of Health and Safety at Work Regulations require a risk assessment along the following lines:

• Assess the risks created by working from home, including identifying hazards, and who is at risk (i.e. other members of the household)
• Inform the person or anyone else affected about these risks
• Take preventative actions or precautionary measures to address them
• Repeat the risk assessment at intervals

In the office environment, the designated health and safety manager undertakes risk assessments directly. This approach can be intrusive and impractical at an employee's home, and self-assessment is often the best approach, backed up by training, support and provision of equipment such as chairs, desks and lighting.

A holistic approach to health and safety will also take note of the reduced risk that home workers experience from traffic accidents and stress-related illnesses.

**Working time**

The European Working Time directive also applies to staff working at home, and compliance can be treated in a similar way to health and safety. Most organisations will introduce some form of time recording in order to operate a flexible working scheme, and this can be used to monitor compliance with the directive.

Moving away from the regulations, there are risks that staff will work excessive hours and fail to take the necessary breaks at home, ultimately to the detriment of their health and work quality.

**Confidentiality and security**

Removing work from the office, either physically or electronically, can increase the risk that confidential information will be exposed.

Technology solutions, such as passwords, encryption and biometrics, are addressed in the next section. However, it should be emphasised here that passwords must be kept secure and certain precautions must be taken. Particular issues relate to work in progress being seen by household members and PCs being used for domestic and work applications.
Options can include lockable furniture, such as workstations where computers can be locked away.

The key is to understand the risks, address those risks through a combination of technology, procedures and training, and monitor compliance. If, after this, risks remain too high, home-working should not be facilitated.

**Insurance**

Working from home impacts all equipment, employer’s liability and householder insurances. Issues are mainly to do with clarity and informing all relevant parties. For example an employee’s household insurer may need to be informed if their home is being used for work. There is evidence that some insurance companies look favourably on home working, as higher levels of household occupation reduce the risk of theft.

As with all issues related to home working, the employer’s policies, procedures and guidelines should be clear, and establish a reasonable balance of responsibility between employer and employee.

**Dealing with noise and distractions**

Many workers flee to their home to get on with work without the continuous distractions and interruptions of office life. Conversely, employees working at home report having to cope with a variety of other distractions that range from noisy children and animals, to the silent beckoning of the biscuit tin!

To a large extent, these are management issues, but there are also important facilities considerations which are often related to the nature of the work being undertaken. For example, a home-based call-centre agent will need a noise-free and distraction-free place to work. For different reasons, programming work or other work requiring intense concentration, will also require an environment without distractions and interruptions. While general peace and quiet is important for productivity, there may be a less pressing need for complete absence of distraction for someone who occasionally brings work home, or the largely mobile worker who does a moderate amount of writing-up or exchanging emails from a home base.

**Local authority issues**

Whilst occasionally working at home is a fact of life, more permanent arrangements may be subject to a number of planning and related issues. Generally speaking, where business
use of a house is clearly ancillary to main domestic use, there should not be a problem. However, issues that can trigger problems include:

- Activities that affect the neighbours’ "amenity", such as excessive numbers of visitors, car parking and noisy ventilation units
- Erecting outbuildings or extensions for non-domestic use
- Erecting radio masts or satellite dishes
- Having non-resident employees working in someone else's home office, such as a personal assistant to a home-based manager

In addition, dedicating part of a house to work could trigger a liability for business rates, although this is very unusual. In some cases, local covenants, for example in blocks of flats, may attempt to "ban" working at home. Ironically, it is not unknown for a council to promote teleworking as an instrument of economic development, and then in its role of providing social housing, actually ban its own tenants from doing so.

In practice, there are numerous "grey areas". Employers and employees need to take a pragmatic view on the merits of each case when deciding whether it is wise to contact the local authority for advice or to let sleeping dogs lie. The key variables to take into account are whether the extent of home working activity might possibly constitute a change of use, or whether any building activity would require planning application.

Once again, the role of the employer is primarily to make staff aware of the issues, but not to assume liability.

**Tax and financial considerations**

There are quite a few complex issues to do with compensation for working at home and possible tax liabilities.

It is certainly in order to pay allowances to staff for working at home, though these should be modest and only cover additional and verifiable costs incurred, such as heating, electricity and telephone costs. Payment of "rent" should normally be avoided as it may make part of the house liable for capital gains tax on disposal.

Travel is another area that can cause complications. If an employee is contractually home-based, payment for necessary trips to the office might be treatable as tax-free expenses, although the tax authorities may challenge this.
Equipment provided exclusively for work should not trigger any tax liabilities. In fact, computer equipment provided by an employer for home use by an employee or his/her family is not taxable.

Generally, expenses incurred when working at home are not tax deductible for employees, although certain expenses for a self-employed contractor may be. If the introduction of a teleworking scheme also involves a change in status, with employees becoming self-employed contractors, this may be a relevant consideration. Increasingly, however, the Inland Revenue is taking a hard line against such practices.

Legislation and interpretation is changing all the time and professional advice should be taken before embarking on a scheme.

**THE MOBILE OFFICE**

A notebook PC and mobile phone enable staff on the move to be more productive. They can spend more time with customers, clients or suppliers, and proportionally less time in the office. In fact, large numbers of people, even those in conventionally non-mobile roles, are recognising the benefits of true location-independence.

As technology improves, especially with the forthcoming broadband wireless networks, increasing numbers of staff will want to work this way.

Many of these people will start to work more from home. In organisations where this way of working is already popular, for example professional sales teams in the IT industry, e-mail processing, web-based customer research and proposal writing is all undertaken at home, often in the evenings. Customers are visited during the day and occasional trips are made to the office or other venues for team meetings.

Most of the home-working considerations in the previous section apply for these people. Additional facilities issues around mobile working are outlined below.

**Work locations**

As well as in the office and at home, fully mobile staff may work at the following locations:

- In a car, train or plane
- At a railway station, airport, roadside café, hotel lobby
- At a third-party business centre
- At a customer or other third-party's site
For the facilities manager, the first two of these points imply a minimal office, consisting of just the technology and whatever facilities happen to be available. (However, there are of course health and safety implications in ad hoc "working anywhere".)

With the second two points, there is considerable scope for specification of preferred facilities, which would be formally specified in contracts and service level agreements.

In extreme cases, people may be required to work in very remote or diverse locations, yet they still need to have an effective method of communication with the head office. The BBC camera crews and programme teams working on location around the world are a good example. Inevitably, this brings about its own set of issues.

Health and safety
Mobile workers face a number of risks that do not exist in the office or the home. Apart from general risks, for example road traffic accidents and crime, facilities managers need to take account of:

- Working whilst driving – some employers insist mobile phones are turned off whilst driving, whilst others provide hands-free kits
- Theft of equipment – mobile PCs are a particular target, especially in the street and at railway stations. Carrying computers in normal briefcases or bags reduces the risk.
- Health and safety implementation at third party locations
- Additional risks from injury through poor posture and working in non-optimal lighting conditions when working on the move

Insurance
As with home working, the main issue is to be aware of the risks and ensure they are adequately covered: theft, personal injury and third-party liability. Most policies exclude the theft of equipment from cars unless securely locked in the boot.

Confidentiality and security
The home working issues addressed in the previous section are compounded for mobile staff, as they are often overlooked while they work in public places and incur a greater chance of equipment theft.

Although, the risks are quite obvious, it is surprising how many work-related mobile phone calls can be overheard on public transport and how many documents can be read from screens. Once again, the solution is a combination of procedures and training.
So far, one of the greatest obstacles to the use of third party facilities has been employers' fears about security. Many demand exclusive use of workstations and storage that can be locked and stowed securely away.

Such fears may be justified or exaggerated. It is necessary to make an assessment according to the merits of the work involved, the sensitivity of the information accessed or processed by staff, and the relationship between the employer and the third party organisation.

**A STRATEGIC APPROACH**

**Collect information and consult**

Assuming an overall strategy for flexible working has been proposed, the facilities team needs to translate this into a systematic, justifiable and manageable programme of work.

A good starting point is to collect information firstly, on how facilities are currently used, and secondly, on how staff would prefer to work. For the former, one approach that can be taken involves sampling each workplace every hour over, say, a 3-4 week period to determine whether:

- The workplace is in use by someone (space used)
- The workplace is not being used, but is not available for someone else to use (space claimed)
- The workplace is not being used, and is available for use (space free)

The charts below show some results of such an exercise in a public sector organisation.

They illustrate high utilisation by administration and support staff during the working day (several were part-time and some were sick during the survey) and low utilisation by managers and professionals.
Further analysis of this data showed that, in the whole office of 120 people, each of whom had a desk, at no time were more than 45 desks used (38%) and average utilisation during the working day was 25%.

Whatever the results, the important point about this type of analysis is that it provides an empirical foundation for change.

**Respond flexibly**

The hard data, as described in the previous section, needs to be complemented by views of the people who work in the facilities. This can be carried out through a combination of interview and survey methods. A possible approach is described in more detail in chapter 6.

During the consultation and analysis process, it will generally become clear that "one size does not fit all". Different teams and staff members have different requirements that can change on a daily or even hourly basis.

It is important for facility managers to be open-minded in terms of the types of solution they recommend for implementation. Flexible working can only really thrive in flexible facilities. Announcing that, henceforth, all staff will work from home is as inflexible as expecting them always to work at the office – as well as probably being in breach of employment contracts.

**Learn from best practice**

There are a growing number of successful implementations of flexible working in a variety of sectors. Several case studies exist and many office furniture companies maintain permanent exhibitions of flexible working environments, including home-working facilities.

**Piloting**

In contrast to traditional property strategies that involve specifying, designing, acquiring, fitting-out and moving into a building, most new approaches to providing working facilities can be piloted before large-scale implementation.

Pilots need to be carefully set up, managed and monitored so as to learn the lessons and quantify the benefits prior to roll-out. Whilst some pilots can be exclusively set up and managed by facilities departments, for example new types of furniture, different office
layouts and shared facilities, the most significant pilots will also involve innovations in technology and human resources.

**Involving the users**
People can be very protective about their working environment and feel threatened by change, especially when it may involve loss of personal space. It is vital that staff are consulted and involved at all stages. Our experience is that users can be highly supportive, even of radical changes to their working environments, as long as they feel part of the process. By contrast, staff will generally resist change imposed without adequate consultation.

One way of encouraging involvement is to set up a project demonstration area where plans can be posted, furniture put on show, feedback collected and open consultation sessions held. Also, if team space is being implemented, individual teams can be allowed certain leeway in customising their own space.

**Keeping the overall goals to the fore**
A complex facilities redesign or development project is very demanding. It involves careful management of suppliers, contractors and in-house staff, co-ordination of procurement and bringing together numerous disciplines – usually in a testing timescale. Certainly, achieving goals on time and within budget can be challenging, particularly where innovative concepts are being put into practice.

It is, however, vital that the business goals of the flexible working project as a whole are kept to the fore. Once the project is given the go-ahead, it is all too easy for facilities, technology or human resources people to doggedly plough their own furrow, doing things the way they know best. Often issues arise which need to be considered from all angles if the right solution is to be found, and the danger is that a lone "tactical" decision from one of the players can significantly undermine the entire strategy.
Chapter 4

Technologies for flexible working
This chapter examines the key technological issues related to enabling and supporting flexible working, and reviews what can be gained. It will be most relevant to IT, telecomms and other managers responsible for technology infrastructure, applications and business processes.

As already stressed in chapter 1, technology solutions should be specified and developed as part of an integrated programme, which also addresses facilities, organisational and people issues. As a result, it is important for all managers involved in implementing flexible work to get to grips with the technology basics. Accordingly, we have presented the issues in a language that is intelligible to the non-specialist.

Volumes could be written on the subject of technologies for flexible working. Hundreds of hardware devices and software applications have been developed and new solutions are appearing weekly.

However, we have focused on a basic understanding of what needs to be achieved, the options likely to be available, deciding on the optimum strategy and ensuring business processes are capable of distributed and remote operations.

This completes an analysis of the infrastructure issues. Attention switches to business processes, showing how they can be streamlined and automated to enable the full range of flexible working solutions, and finally we cast an eye to the future.

An important theme is that, in many organisations, the investments already made in technology are not yet delivering the expected business benefits. Introducing flexible working goes hand in hand with maximising the return on IT investment, and learning to use the full capacity of business applications.

**INFORMATION AND COMMUNICATIONS: SETTING THE SCENE**

In order to work effectively, flexible employees must be fully engaged with the information and communication systems of the organisation. Clearly, any flexible working scheme has to be based on a commitment to the principle of ubiquitous access to information. Otherwise, flexible employees risk becoming “second-class” employees, with one foot on each side of a corporate "digital divide".

**At the core of the organisation**

Information has always been the lifeblood of organisations. It is even more critical today. The traditional armies of clerks, supervisors and managers, who were the keepers of
information, are being replaced or enhanced by the more powerful, affordable, and accessible infrastructure of information and communications technologies.

Corporate information includes documents, messages, conversations, structured data, and so on. It is stored in computer systems, voice-mailboxes, filing cabinets, briefcases, books and people’s heads, and communicated by telephone, IT network, messenger and face-to-face contact.

Conventionally, communication of information has been highly structured and hierarchical, often on a "need-to-know" basis. However, with the advent of the electronic infrastructure, there has been an explosion in the volume of accessible information in organisations. And not only is this information more readily available, it is in principle also instantly available.

The new forms of flexible working are made possible by information and communications technologies. One of the roles of the technology manager is to ensure that people are fully networked into the corporate systems from wherever they may work, so systems must be specified and designed to support location-independent working.

**Digital convergence**

We no longer think of the ability to speak to anyone, anywhere, as a phenomenon. Similarly, we consider sending the contents of a piece of paper over the telephone as being commonplace. Today, we are beginning to regard the ability to store, process and exchange huge quantities of information in the same way, and we expect people in organisations to have all that information at their fingertips.

Currently, most organisations have two largely separate networks that support this free exchange of information – the telephone network and the IT network. Everyone is expected to be “telephone literate”, and it is increasingly assumed that people will be “IT literate”, at least at a basic level.

The trend over the next few years will be for the telephone and IT networks and applications to converge, most likely using the technologies of the Internet. This digital convergence will help remove any remaining technical barriers to fully flexible working.

**UNDERLYING TECHNOLOGY INFRASTRUCTURE**

Although much of the information in this section will be well known to technology managers, we believe it is important to reinforce and explain it, as technology
infrastructure provides the platform on which user tools, applications, processes and ultimately business benefits are built.

We have considered IT and voice infrastructure separately, as that is how they are currently managed in most organisations.

**IT infrastructure overview**

Most large and medium-sized organisations have adopted a standard approach to their IT infrastructure:

- Desktop PCs running a version of Microsoft Windows, Microsoft Office, a web browser (from Netscape or Microsoft) and a "groupware" application: e-mail, calendar, contacts, file sharing, etc, (Novell Groupwise, Lotus Notes or Microsoft Outlook)
- Servers that provide applications, file, database, groupware, web, printer and communications services. "Legacy" (i.e. old mainframe) applications are often reconfigured to appear as network servers
- Structured cabling that can be used for either voice or data
- Local area networks that use the structured cabling to connect PCs, servers, and printers, etc, and are themselves connected together with hubs, bridges and routers.
- Wide area networks that connect sites together and connect to the Internet, using digital leased lines or digital dial-up lines (ISDN)
- Notebook PCs, which may spend some time connected directly to a local area network, some time connected by analogue or digital dial-up and the rest of the time disconnected from corporate systems

Until recently, electronically stored records were inadmissible in court cases. This is beginning to change. Legitimacy of the media as legal proof will forward the case for electronic (paper-free) archival of critical data. However, it has taken many years to reach this point, and may take just as many again to gain full acceptance and more crucially, user/customer trust.

For IT managers, it is seemingly a never-ending task to maintain the entire organisation to the same technology standard. In practice, it is common to find a mixture of hardware types and software versions as refresh and upgrade programmes are implemented.
Voice infrastructure overview

Although less glamorous than IT, there has also been a progressive upgrading of corporate telephone systems, again assisted by the Millennium threat. Whilst there are quite a few variations, a typical system now offers:

- Standard or "smart" telephones, the latter facilitating access to special system features
- Direct dialling from and to individual extensions, with "virtual numbers" that can follow users wherever they go - both within and away from the network
- Call transfer, conference calls, dealer calls, call distribution (as required in call-centres), group pick-up and a host of other advanced call handling options
- Voice-mail, that can be accessed remotely using a security code
- Distributed networks that allow an internal system to span a number of sites
- Connection to one or more public network operator (e.g. BT), with software to select least-cost routes

Most commonly, telephone systems are implemented using a PBX (Private Branch Exchange) on each site. Many telephone companies offer "centrex" services, whereby the PBX functions are provided by the local exchange.

In the main, telephone systems tend to be managed separately from IT systems. Other than in call-centres, and for call-logging and service set-up purposes, the systems are not connected. However, it is likely that this situation will need to change as the technologies and services converge.

Wireless technologies

Twenty years ago, radio engineers struggled to find employment. Today, digital radio technology has revolutionised telephony and broadcasting, and is poised to do the same for computer networking.

There are now over 34 million subscribers to mobile telephone services in the UK, with high growth expected to continue as prices fall and new services come on stream. Mobile phones are widely used in business, though they are not generally integrated with the
corporate fixed networks. In addition to voice, they can also be used for mobile PC remote access, though speeds are low and costs are high. There are associated data standards, including SMS (Small Messaging Service) and WAP (Wireless Application Protocol) though these are more oriented towards transactional applications than computer connectivity.

Within the office and home environments, digital radio systems are also being used, though usage is not yet widespread:

- The European Digital Cordless Telephone standard (DECT) supports wireless PBXs as well as individual phones. This enables users in buildings, such as maintenance staff, to remain in contact wherever they may be.
- Wireless local area networking allows, for example, portable computers to be used anywhere within a building, without the user needing to find an access point. Accordingly, it reduces and simplifies cabling requirements.
- Although not a radio technology, infrared is used in a number of proprietary products such as cordless keyboards and mice, and laptop connections to other PCs and printers, etc.

The recently launched "Bluetooth™" standard has been designed specifically for short-range cable replacement. Ultimately, its very low cost will encourage deployment in a vast range of office and consumer equipment.

The most significant development of wireless technology for location-independent working is the launch of third generation (3G) mobile networks. Licenses for these were the subject of highly lucrative auctions for the government during 1999, and services will be launched from 2002 onwards. These 3G systems promise high bandwidth "always on" Internet access, as well as a host of new voice, video and other services. Prices remain to be determined.

**IP**

The "Internet Protocol" (IP) has become hugely important over the last decade. It is the universal protocol for any computer, anywhere in the world, communicating with any other. IP makes possible the worldwide web, e-mail, file transfer, secure tunnelling, "voice-over IP" and other applications.

Whilst IP can be used simply as a connection protocol, allowing, for example, a remote computer to connect to a corporate local area network, it is at its most powerful when the corporate applications have been "Internet-enabled".
Intranets have conventionally been viewed as "internal webs", presenting information on demand to users within a secure network. Increasingly, a wide range of business applications, such as accounts, management information systems and database applications, are being redeveloped with browser front-ends so they can be accessed using normal web browsers rather than special applications.

Intranets can be extended securely via the public Internet to include remote offices and location-independent staff. In the same way, "Extranets" can extend a corporate system to include other organisations, such as partners and suppliers. In the future, most corporate IT applications will be Internet-enabled, thereby allowing them to be used by approved individuals with access to the Intranet or Extranet.

The other significant IP development is telephony and other forms of real-time communications. Already, it is possible for people connected to the Internet to communicate by voice and video, though reliability and quality has so far been inadequate for corporate use.

As with other Internet-related developments, change is happening fast. Leading telephony organisations are launching serious IP telephony applications, and so-called convergence is happening. Collaboration and conferencing tools, which provide voice, video, document transfer and applications sharing, are set for rapid development and growth.

All this is excellent news for the future of flexible working, further reducing costs, improving performance and simplifying set-up and support.

Security

Security is a complex subject, and here it is only possible to skim the surface of issues in the context of location-independent working.

The starting point is an understanding of the risks:

- Unwanted visitors may gain access to company information
- Communications with remote users may be intercepted
- Information stored on remote PCs may be compromised
- Unauthorised users may be able to use remote PCs
- Unsupervised employees may take less care of confidential information.
- Equipment may be lost or stolen
- Data protection legal requirements may be inadvertently breached
A variety of security technologies are available, including passwords for log-in, encryption of data transfer, biometric user validation and use of auxiliary equipment such as rolling pass-code generators and proximity detectors.

IT and voice security are important issues and deserve to be taken seriously. Interestingly, most breaches occur as a result of careless implementation or human indifference. It is not unknown for notebook PCs to be fitted with labels carrying ID and password information for all to see!

Security is not solely a technology issue. It is also about good management and appropriate policies, taking account of the different types and sensitivity of information, roles and rights of access.

TECHNOLOGY INFRASTRUCTURE FOR REMOTE WORKING

For most people undertaking work at home, either full-time or part-time, the ideal solution is to "stretch" the corporate desktop in its entirety to the remote location. In theory, this means:

- The telephone operates without compromise as a fully functioning extension on the corporate telephone network
- The computer also operates without compromise as if it were connected directly to the corporate wide area data network

Currently, in practice, compromise is almost always necessary, as the costs of providing fully functional, high bandwidth voice and data connectivity are still prohibitive.

Solution 1: Full voice and data routing

This solution currently comes closest to the ideal, though with data bandwidth restrictions and cost implications:

- ISDN is installed at the remote location, together with special routing equipment
- All corporate telephone network services and features are extended to the remote location over one ISDN channel
- The corporate local area network is fully routed to the remote location, using data compression to increase the effective available bandwidth

The strengths of this solution are seamless operation. The phone and PC at the remote location operate identically to the office. Also, online user and technology support services can remain unchanged.
The weaknesses are modest data speed (even with compression), long-distance phone calls and relatively high capital expense.

**Solution 2: Voice divert, data dial-up**
Currently, this is probably the most popular solution, largely because it is cheap to implement:

- Inbound voice calls are diverted to the remote location by the corporate PBX or public network; outbound calls are dialled directly or via the PBX
- Modem or ISDN dial-up (with or without compression) provides data access to a remote access server or, for web browsing, to an Internet service provider

The strengths of this approach are that its costs are low and that it is easy to configure.

The weaknesses are low data speed, non-seamless operation, long distance phone calls and the need for special support arrangements.

**Solution 3: Voice divert, data via ISP**
In this option, an Internet Service Provider (ISP) is used to provide data access:

- Voice is handled as in the previous section
- Data connection is achieved using Internet "tunnelling". This effectively allows the Internet, rather than the telephone network, to provide the secure link into the corporate systems. The new high bandwidth Internet access services such as ADSL, cable modems and fixed radio can be exploited to good effect

Strengths are low equipment and usage costs (unmetered Internet access services can be used) and relatively easy configuration.

Weaknesses are possible security concerns, Internet bottlenecks, low data speed using modem or ISDN Internet access and difficulties in remote management.

**Solution 4: IP only**
Making greater use of the Internet will probably be the preferred solution of the future:

- Telephony is delivered via the PC using "voice-over-IP"
- Data connection is as in the previous section

The strengths are full location-independence, no long distance calls and low equipment costs. As the Internet improves, high speed unmetered access becomes available and wireless services are launched, this approach can only get better!
Weaknesses are that it is still relatively unproven, voice quality and grade of telephony service may be variable and Internet bottlenecks may further degrade service.

Nevertheless, this is a "fully converged" solution and will also support the widespread use of online meeting and collaboration tools. The inventor of the Internet, Vinton Cerf, proudly wears a T-shirt proclaiming, "IP under everything"!

In due course, it is likely that corporate communications will be built on IP.

**The location-independent PC**

Many large organisations have chosen to configure all their PCs identically to simplify management and support. Customisation is performed at log-in, at which time the specific configuration is downloaded from a server. This can include desktop "look and feel", e-mail and groupware personal data, history files and applications access rights.

An incidental benefit of a common operating environment throughout the organisation, is that mobile staff can log-in to any PC, or plug their notebook PCs into any network access point. Some large organisations even take this idea internationally, so travelling executives are able to keep in touch and continue working, wherever they may be in the company.

Extending this concept away from the organisation’s network is technically straightforward, using the techniques outlined above. It is, however, sometimes impractical, as the time taken to synchronise and customise over low bandwidth connections may be prohibitive. For laptop and home PC users, most of the customisation can be pre-installed, reducing log-in downloads mainly to e-mail, calendar and other data. When using shared PCs, for example in cybercafés, staff might be limited to accessing (with appropriate security) the corporate Intranet and other web-enabled applications.

Small portable PCs, sometimes called palmtops, personal digital assistants or pocket PCs, can offer diary, contacts management, e-mail and other applications. Increasingly, these can be synchronised with corporate networks, adding another option for mobile workers.
The location-independent phone
Many people give out their mobile phone numbers to their contacts, knowing that calls will reach them wherever they are. There are, however, several problems with this approach:

- Grade of service is often poor due to coverage, drop-outs and call quality, etc.
- Costs to the caller are high
- Mobile phones are rarely integrated with corporate systems, so call transfer, conferencing and other facilities are not generally available

Other operators also offer location-independent numbers using the fixed network. The user controls where he or she wants the call delivered. However, these normally use premium rate tariffs and are difficult to integrate with corporate systems.

At the moment, the preferred approach is to enable so-called "virtual numbering" and "follow-me" services on the corporate network. The user’s direct dial number can be redirected by the user to any other number: internal, external fixed network, external mobile network, voice-mail, etc. However, each redirected call beyond the internal network incurs a charge to the organisation, and the value of this type of service comes at a cost which some organisations may not wish to carry.

THE ANYWHERE/ANYTIME OFFICE
In this section, we list the various locations that can now function as part of the distributed office, and outline their main technology characteristics and issues.

Main offices
The standards in the main office provide the benchmark for other locations. The main servers and PBX will be located here, with PCs directly connected on a high-speed local area network. Where there is more than one main office, high capacity and high-speed private networks ensure all perform equally well.

Branch offices
Even with only a handful of workstations, small offices benefit from a local area network connected to the main office using either a leased line, automated ISDN dial-up or IP via an Internet service provider. For cost reasons, speed is normally compromised. However, careful design, including a local server, should minimise the impact of this.

A similar approach applies to telephony. Most PBX vendors offer branch office solutions that connect seamlessly with the main system, though normally using the public network to route calls, rather than a leased line.
Third party offices

A generic third party office, for example at a business centre, will typically provide PCs running standard office software and Internet access. Sometimes, modems or ISDN connections are also supplied.

Provided bandwidth is adequate, Internet-enabled IT applications can usually be run without difficulty. Remote access via modem or ISDN requires some temporary configuration to be carried out to network and dial-up settings.

Security can be a problem at third party offices. A common issue is that Internet history files, memory caches and dial-up settings are left behind for the next user to study.

If the third party office provides direct inward dialling, the main office follow-me facilities can be used to divert calls to employees when they are based there.

Home offices

Staff who spend more than, say, one or two days a week working at home will normally wish to set up a permanently configured office, with a dedicated PC and telephone. The most straightforward solution is ISDN dial-up for remote IT system access and call-forwarding. IP solutions are becoming more attractive with the launch of unmetered services and higher bandwidth, and these are likely to offer better performance and lower costs.

Occasional home workers may use either mobile PCs (see the next section) or a multi-purpose home PC. In the latter case, similar considerations to more regular home workers apply, with the added complication that security issues need to be carefully addressed.

Teleworking is working from somewhere other than your regular office. In its simplest form it can cover the use of a PC with a modem to allow connection to an office network via a dial-up connection. Toshiba notebook PC’s are well suited to this application as they all have a built in modem as standard to support dial-up/RAS type connections. In certain cases, where more functionality and flexibility are required, then a solution based on a NIC-equipped PC/Portable (Toshiba Tecra 8200 with built-in ethernet) or ISDN/ADSL connection may be the better way to go for heavier network users.
Mobile offices
Corporate users of mobile PCs currently operate in four ways:

1. The computer is never connected to the corporate network
2. The computer is connected to the corporate network when the user is in the office (main or branch office)
3. The computer is also connected to the corporate network by dial-up from home or other locations (e.g. client office, third party centre, hotel, etc)
4. The computer also, or only, has a wireless connection to the corporate network

The trend is towards the third and fourth of these, with "always on" wireless connection likely to become increasingly important following the launch of 3G services.

Mobile phones are already a well-established feature of the mobile office. Apart from cost and performance, they provide effective integration with corporate systems.

Virtual offices
By definition, the virtual office does not have a physical manifestation. The concept is to dispense entirely with main and branch offices and work from third-party, home and mobile locations.

Clearly this is only possible in a largely paper-free working environment.

Although the most radical approach, it is now becoming a realistic option through:

- Web-enabling and locating all corporate IT applications on a dedicated, secure server at a business Internet service provider
- Ensuring all users have reliable and fast Internet access from wherever they are working
- A centrex-based implementation of telephony

As with other implementations, the trend is towards data and voice convergence; the "server on the Internet" will, in future, host voice and multimedia services as well as information systems.

ADAPTING PROCESSES FOR LOCATION-INDEPENDENT WORKING
Most information systems departments will have to undertake a considerable amount of groundwork before fully location-independent working becomes a reality. A further consideration is the logistics and cost of technically supporting a distributed workforce.

Paper-free processes
The use of paper as a primary medium for information communications and storage is one of the greatest inhibitors to more effective and efficient working. Compared to electronic
systems, paper-based systems are slow, expensive, inflexible, labour-intensive and demanding of space. Furthermore, staff are forced to base their working practices around filing and administrative systems, sometimes making visits to the office simply to pick up information.

Breaking free from the constraints of paper is far from easy. Whilst technology is no longer a serious barrier, the biggest problems stem from deeply entrenched attitudes, lack of awareness and fear of change, especially amongst administrative staff. There is also an unwillingness of organisations to take a strategic approach to paper reduction.

Mentioning the words "paper-free" often generates amusement and ironic comments. In most people’s experience, computers generate paper rather than reduce it. However, the scope for reduction is real, and "paper-free" needs to become a real aspiration. Just because it is difficult, is no reason not to do it!

A whole guide could be written on this subject alone, but the following checklist should help the IT manager understand and begin to address the issues, in co-operation with facilities and human resources colleagues:

- Reorganise existing paper filing:
  - Eliminate personal storage of files, eliminate duplication of paper and file current material at a team or department level
  - Archive off-site and implement strict processes for archiving non-current files
- Eliminate the use of paper for internal communications such as memos and forms, etc
  Also discourage (or ban!) printing of e-mails, web pages and document drafts, etc
- Move all static information, such as manuals, procedures and guidelines, to the corporate Intranet
- Ration printers and photocopiers. (see chapter 3)
- Insist on electronic communications with business partners. Where this is not possible, scan incoming documents
- Exploit to the full groupware, Intranet, knowledge management, integrated messaging and other technologies

**Groupware**

Many organisations have been using e-mail internally since the mid 1980s, and external connections have been widely used since the early 1990s.
The early e-mail programs are largely being replaced by so-called groupware applications, such as Microsoft Exchange / Outlook, Novell Groupwise and Lotus Notes. These offer additional services and facilities, for example:

- Diaries that not only allow personal schedules to be stored, but enable meetings to be scheduled
- Personal, departmental and company-wide contacts lists, that can also be accessed through word processing and other applications
- Personal, departmental and company-wide filing and retrieval of messages, and documents, etc
- Synchronisation of information kept on mobile PCs and home computers with office systems
- Web-enabled capabilities, including secure remote access and direct web-publishing of stored information
- Launch of online conferencing and collaboration tools. (see below)

When they are introduced strategically, and staff are properly trained, groupware applications can play an important role in enabling paper-free and location-independent working. However, our experience is that this rarely happens and the benefits are consequently lost.

Intranets and web-enabled applications

Intranets are closed user-group websites, exploiting the technologies of web browsers, servers and applications over a secure internal network.

A modern web browser allows information to be viewed and used interactively by the user. The BBC is a good example of an organisation that is using its Intranet effectively on a remote basis. A diverse number of BBC personnel frequently dial-up to access the Intranet from their home, or plug in via touchdown points.

Virtually any IT application can, in theory, be configured to operate through a browser. Web servers feed the browsers, receive information back from users and connect to databases and other applications, either on the server or elsewhere.
Some corporations have embarked on projects to fully web-enable their information systems. In practice, this means that users interact with their systems using only a web browser interface. This, in turn, simplifies technical and user support and enables all applications to be used remotely.

Practical applications of Intranets, relevant to location-independent working, include:

- Publishing of relatively static material, including directories, etc
- Access to documents, presentations and other material
- Replacement of forms: vacation requests, sickness reporting, timesheets and expenses submission, etc
- Group discussion forums
- Front-line staff support
- Access to databases and other corporate applications
- An electronic filing and collaboration alternative to network drives or groupware folders
- A portal for Internet access to preferred or recommended sites

Part of the power of Intranets is that they can be extended securely beyond the physical boundaries of the organisation, not only to staff working remotely, but also to customers and suppliers.

Knowledge management
This is another area that could be the subject of a guide in its own right. Whilst there are various rigorous definitions of what is and what is not knowledge management, a pragmatic approach is that it is concerned with collecting, organising, protecting, analysing and making available an organisation’s collective knowledge, to the benefit of the business.

A common problem is that valuable information is stored in a variety of locations, such as financial, personnel, supplier and customer chain, production and workflow systems, as well as individual PCs, departmental systems, ad hoc databases, and so on. Knowledge management techniques can add value to this information through effective collation, classification, correlation, analysis and interpretation.

Most approaches to knowledge management are themselves web-enabled, and make extensive use of automatic indexing, search engines, metadata and so on.

As with groupware and Intranets, knowledge management systems further enable and support location-independent working.
Integrated messaging

The ability for any members of staff to send and receive messages is vital in many organisations. Messages may be delivered face-to-face, by paper memorandum, by e-mail, by telephone and possibly by multimedia messaging or a custom business application. The essence of a message is that it is asynchronous – it does not require the sender and receiver to be connected simultaneously.

The two most popular forms of message delivery are e-mail and voice-mail. Conventionally, these are handled by totally separate systems. Also, few people set out to deliver a voice-mail – instead, it is usually a consequence of the phone being engaged or not answered.

Integrated messaging seeks to establish a single messaging environment, where any message can be originated or collected by telephone or PC. There are, of course, limitations – non-text attachments to e-mails cannot be converted to voice, and speech recognition may not always be accurate. Nevertheless, the contribution to operational efficiency can often outweigh the difficulties.

Multimedia collaboration

Video conferencing has a mixed history in business. For most people, the experience revolves around needing to visit a special and expensive conferencing suite, having to use special telephones, encountering poor quality, or working with images that are the size of postage stamps. Either way, video has not really caught on in business, other than as a training tool.

This situation is now changing with the arrival of high-speed IP networks, powerful PCs and low-cost video cameras. Products such as Microsoft NetMeeting, supplied as part of Office 2000, allow users connected to the Internet to:

- Communicate by voice, video and text "chat"
- Pass files to each other
- Draw on a common "whiteboard"
- Share applications running on each others' computers
- Take control of each others' computers

When it comes to keeping in touch across a distributed workforce, the advent of unmetered high speed Internet access should herald an upsurge of interest in these products.
Supporting a distributed workforce

User support consumes a large proportion of the costs associated with technology in most organisations. These costs include hardware and software maintenance, user help, troubleshooting and training. The capital costs of PCs represent only a small fraction of total operating costs.

Many IT managers are reluctant to encourage take-up of remote working as the costs of supporting remote users could be even higher than those in the office. Some get around this by insisting that equipment is returned to the office in the event of a problem. However, this shifts even higher costs onto the users. Further complications and cost implications arise as a result of remote users tending to require support outside the normal working week. This is an issue that requires a careful and structured response in terms of the specification, design and implementation of hardware platforms. It also impacts configuration, applications and support, including remote diagnostics.

Third party services, which take over all aspects of home and mobile worker support, are being launched. These include technology, telecommunications, health and safety, insurance and other aspects. The important thing to remember is that whilst the direct costs of supporting a remote user may be higher than in the office, this is more than offset by savings in office space and productivity gains.

FUTURE DEVELOPMENTS

Technology is not standing still. Managers need to specify solutions that are, as far as possible, future-proof and capable of benefiting from new technologies and innovations as they occur.

Probably, the three main areas of development that are most relevant to flexible working are:

- Continued streamlining of business processes through paper elimination and the introduction of advanced knowledge management techniques
- Increased penetration of IP as the universal networking protocol for data, voice and multimedia information, coupled with better and faster access
- The launch of new wide area and in-building wireless services

Finally, as is the case with facilities managers, technology managers must keep their eyes on the bigger picture, and avoid becoming too narrowly focused on technology solutions. Most large organisations have already invested in good technology infrastructure, and from a business perspective, making more effective use of current systems may often be preferable to investing in new technology.
Chapter 5

Organisations and people
This chapter is aimed at human resources managers and line managers. It is also intended for people who are responsible for organising, managing, supporting, recruiting, training and retaining, and those with an interest in introducing more flexible working methods.

Most personnel managers understand conventional flexible working practices, such as flexible working hours and non-standard contracts, and many have introduced them. However, new flexibilities made possible by technology are alien to many managers and in this chapter, we seek to provide some practical advice and guidance.

In line with the recurring theme of this Toshiba Guide, the introduction of new working methods needs to be carried out in close co-operation with facilities, technology and other managers.

**A CULTURE FOR NEW WAYS OF WORKING**

**Lessons from history**

Good organisation and effective communication have always underpinned the great enterprises – empires, nations, civil administrations, fighting forces, public services and successful businesses. Clear objectives, command structures, leadership and roles are essential. These principles, which have been applied by many commercial enterprises, still form the basis for much of today’s accepted good management practice.

Traditionally, tasks and information are managed downwards. Issues and exceptions are escalated upwards. Staff work to tightly defined roles, often written down in job descriptions. Barriers are built between departments, including the creation of "internal markets". Allegiances are often formed to the unit or department rather than to the organisation as a whole.

**The legacy of geography**

Structures within distributed organisations are often based on geographic location. Competing, overlapping or duplicate functions may be located at different sites for reasons that are often lost in the mists of the organisation’s history.

Traditionally, people based out of the main centre could only work effectively with a full office infrastructure, support staff and management. Today, in spite of radical changes in technology and business processes, regional and local offices and management structures have persisted. In many cases, the perception that physical location is still important to customers remains at the fore, but this is often not so.
Controlling information
Managers and other people in organisations accumulate information for many reasons. A positive reason is to help them do their job more effectively. Quite often, however, information is used simply to reinforce hierarchy.

One unfortunate side effect of this is that, usually unintentionally, these people become "information gatekeepers" – the flow of information is always directed through them, and they only dispense information on a "need to know" basis.

In effect, decisions get referred upwards to people who have access to information and the authority to act, but as a result, are suffering from information overload.

Management by presence
Most managers, when consulted, like to believe in management by results. Yet the truth is often at the other extreme. Staff are frequently monitored, not only by managers but also by colleagues. This includes when they arrive for work, when they leave and how long they take for lunch. In this type of environment, those that do work flexibly often have to endure criticism from colleagues, as well as being disadvantaged when it comes to career advancement opportunities.

Interestingly, the UK has the longest working hours in Europe, especially amongst managers, professional and administrative staff, yet output is no higher than in countries with shorter working hours.

Towards the learning organisation
The concept of the “learning organisation” turns conventional thinking about the "command and control" culture on its head. It recognises that people perform better if they are respected, trusted and motivated.
A learning culture has been defined as a working environment based around the following ten principles:

- **Vision**: all staff are aware of and identify with the vision, mission and strategy at all levels – corporate, divisional, departmental and project
- **Responsibility**: the individual has the responsibility to acquire the skills, access to information, support and tools necessary to do the job
- **Support**: the organisation provides the necessary infrastructure and services to support the individual
- **Information**: access to information is constrained only by the competence of the individual and genuine security considerations, rather than outdated concepts such as "need to know". Information is not censored, except for good reason
- **Consultation**: it is accepted that the best ideas do not necessarily come from the most senior people
- **Openness**: open debate and constructive criticism are encouraged, without fear of management reprisal
- **Learning**: all staff, even those at the top, are committed to acquiring new knowledge and understanding, and learning new skills.
- **Recognition**: skills, abilities and learning achievements are recognised through meaningful accreditation
- **Caring**: the organisation cares about the lives, careers, interests and well-being of its employees
- **Improvement**: the organisation is itself committed to continuous improvement in its structure, processes and working methods, including learning from its staff

Used constructively these principles can form the basis of a checklist to assess an organisation’s readiness for new ways of working.

**A foundation for flexible working**

The point of all this is that, in order to benefit fully from flexible working, the culture of the organisation and the style and skills of managers need to be prepared for it. Introducing new technology, new facilities and policies for more flexible working will generally achieve very little if the organisation remains wedded to the values, culture and management methods of the past.
WORKING FLEXIBLY

A definition

Referring to chapter 1, a useful definition of flexible working relates to when, where, how and what work is done:

<table>
<thead>
<tr>
<th>Flexible contract:</th>
<th>Workers are employed and/or rewarded in non-standard ways.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexible hours:</td>
<td>Work is performed at times that better suit the employer and/or employee.</td>
</tr>
<tr>
<td>Flexible location:</td>
<td>Work is carried out wherever is most appropriate and effective for the employer and/or employee.</td>
</tr>
<tr>
<td>Flexible tasks:</td>
<td>Multi-skilled workers are able to undertake a variety of tasks according to need.</td>
</tr>
</tbody>
</table>

Who gains?

The beneficiaries of flexible working include both employers and employees:

- Employers are able to match resources to work needs, and attract and retain staff, whilst reducing fixed costs, boosting productivity and improving customer service
- Employees can gain access to employment, explore new career opportunities, raise their incomes, reduce their living costs and balance the demands of work and home more effectively

Families, communities and the environment can also gain. These issues are addressed further in Chapters 6, 7 and 8.

For the human resources manager, the challenge is to develop and implement new working practices that benefit both the organisation and the staff. In the long term, these interests converge – a more contented and motivated workforce will deliver improved business performance.

Types of jobs

Several treatises have been written on the demands and characteristics of different types of job, analysing interactivity, autonomy, dependencies and other factors. Although this Toshiba Guide does not aim to go into detail, it is nevertheless important to understand how roles differ and, as a consequence, how different types of flexibility apply.

A common segmentation, which can be applied in a variety of sectors, is by manager, professional, front-line support and back-office support.
An illustration

The following example, from a business-to-business sales and marketing operation, shows where people were spending their working time before and after the introduction of flexible working:

Before:

<table>
<thead>
<tr>
<th></th>
<th>Main office</th>
<th>Satellite office</th>
<th>Home</th>
<th>Away</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managers</td>
<td>40%</td>
<td>5%</td>
<td>55%</td>
<td></td>
</tr>
<tr>
<td>Professionals</td>
<td>33%</td>
<td>6%</td>
<td>61%</td>
<td></td>
</tr>
<tr>
<td>Front-line support</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Back-office support</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

After:

<table>
<thead>
<tr>
<th></th>
<th>Main office</th>
<th>Satellite office</th>
<th>Home</th>
<th>Away</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managers</td>
<td>25%</td>
<td>5%</td>
<td>20%</td>
<td>50%</td>
</tr>
<tr>
<td>Professionals</td>
<td>16%</td>
<td>26%</td>
<td>58%</td>
<td></td>
</tr>
<tr>
<td>Front-line support</td>
<td>83%</td>
<td></td>
<td>17%</td>
<td></td>
</tr>
<tr>
<td>Back-office support</td>
<td>60%</td>
<td>25%</td>
<td>15%</td>
<td></td>
</tr>
</tbody>
</table>

This was achieved through a combination of the following measures:

- Managers and professionals were equipped and enabled to do some of their work at home
- Although time away remained broadly the same, travel was reduced substantially and more time was spent with customers and business partners
- The front-line support unit – in effect a call-centre – was relocated closer to a residential area and a flexible, staff-driven rota scheme was introduced. Some people were set up to work part-time from their homes
- The total number of back-office staff were reduced, with some relocated to the satellite office and some of the work – mainly finance – being carried out at home.

Along with all this, the main office was reduced in size and remodelled into mainly shared space. Paper-free business processes were introduced, remote access technologies were installed to facilitate more productive home and mobile working, and the call-centre service was extended from 40 to 60 hours per week.
Although details will vary from case to case, this example is not atypical, showing how human resources managers need to work with their facilities and technology colleagues to deliver solutions that work for both the business and its people.

**Responding to demand**

Managers have a duty, reinforced in part by recent European employment legislation, not to practice policies that discriminate against particular groups of workers, such as those with disabilities or degenerative illnesses, parents of young children and carers of elderly relatives.

A common situation faced by human resources managers is that individual members of staff put in a request for more flexible working arrangements, usually in response to changed personal circumstances. Other requests from staff may result from relocation because of a partner’s job or a desire for a lifestyle change.

These requests often present a dilemma for two main reasons – business impact and precedent. For example, a request to work part-time may necessitate the recruitment of another part-time worker or substantial re-allocation of work to other staff members. Also, many employment-related costs are fixed, for example premises and IT, whether someone is working full or part-time. Finally, human resources managers are often fearful of raising expectations amongst staff in general, and then being unable to deliver.

The result of all this is often a fudge, with no clear policies and different arrangements depending on department or role. In these circumstances, with no clear business justification, flexible working can be perceived as a burden on the organisation. The survey in 1998 by Mitel, Teleworking in Britain, found that 65% of organisations had no policy for teleworking.

The solution is to be ahead of the game, with active policies for flexible working that benefit the business and satisfy the aspirations of staff.

**Challenging the status quo**

It is not only cultural factors that inhibit flexible working. Many organisations have deeply entrenched ways of organising themselves that are rarely challenged, for example:

- The numbers and roles of managers
- Work output expectations
- Support staff ratios
- Demarcation - who does what?
- Rank and role entitlements: offices, secretaries, company cars, etc.
- Working and opening hours
The greatest business performance improvements from flexible working are often delivered when it is part of a more radical overhaul of processes and working practices.

Human resources managers are often expected to fulfil purely tactical roles, such as hiring, firing, training and dealing with day-to-day issues. The promotion of the business benefits to be derived from flexible working gives them a new and more strategic role.

**Work-life balance**

The reality of modern life in the Western world does not paint a rosy picture:

- Stress levels are on an ever-upward trend
- People work longer hours than ever
- In an increasing proportion of households, both partners work
- Single parents have to work all hours to make ends meet

Throughout the last century, futurists foretold a coming age of leisure, where automation and computing took the strain, liberating us to enjoy rich, rewarding and balanced lives. But it has failed to materialise. Instead, those of us in employment work harder and longer. Those of us who don’t work, live in straitened circumstances, unable to enjoy the enforced leisure and domesticity.

**Does it have to be like that?**

Leaving aside the question of redistributing wealth – which doesn’t seem to be on any major party’s agenda – the solution has to revolve around how we organise our working lives.

And the first step is recognising that the answer is, "No, it doesn’t have to be like that" – if employers and employees are willing to be flexible.

The benefits can be felt in three areas:

- Employees can reduce stress, and become more productive, more motivated, and happier, as they achieve a better work-life balance
- Organisations can boost staff morale, and introduce practices that are more efficient and effective
- Socially excluded groups who out of necessity, have to prioritise home life, perhaps because of caring responsibilities, may gain access to employment opportunities with organisations that allow a better balance

The following sections illustrate how flexible work can help take the strain and redress the balance.
Flexible hours
Arrangements for flexible hours can be of particular benefit for parents with younger children who need taking to and from school, or people with other caring commitments. There is a wide range of models for flexible hours arrangements, allowing employees greater or lesser autonomy. Simply not having to be at the office at 9.00 in the morning can relieve much of the stress of domestic management. Similarly, being able to travel outside the rush-hour removes a significant amount of stress at the beginning and end of each day.

Part-time work
For most people, there are times when working full-time causes excessive conflict with other life commitments. Part-time work should be an attainable option – without loss of benefits or becoming marginalised in the organisation. It will be of real benefit to people with substantial caring commitments, or those returning to work following a period of looking after young children.

Jobshare
Jobshare is a particular type of collective part-time arrangement, where an individual can be assured that someone else is carrying out the job properly when they are not working. Organisations should look to part-time work and job sharing as a means of retaining skilled staff whose skills might otherwise be lost.

Term-time working
Term-time working is a family-friendly policy that is suitable for more people than just teachers. Many people take their holidays, or unpaid leave, and flex strategic absences around school holidays. Proper formalising of arrangements will have benefits for both employers and employees.

Home-based working
Working from home has many advantages for anyone with heavy domestic responsibilities. In the majority of instances, this does not take place on a full-time basis. Instead, it allows appropriate tasks to be undertaken from home – and these are usually accompanied by productivity benefits.

It is almost impossible to work effectively and care for children at the same time - but home based working can make the organisation and management of childcare much easier and less stressful. It also enables contact with children at crucial times of their day, rather than dashing out of the house as they do, and not being there when they return. Importantly, an employee that is free of parental guilt, may be a happier, more motivated employee.
Home-based working, combined with time-based flexibility, can ensure that an employee is always equipped to get on with their work.

**Telecentre working**
If employees have the opportunity to work locally, in a local office or telecentre, this can also help them achieve a more balanced lifestyle. Furthermore, local offices or telecentres will also serve the needs of other itinerant workers, and/or bring services closer to customers in a particular location.

**Parental leave**
Parental leave may be advantageous at times other than the birth of a new baby. In certain circumstances, it can actually be more important for the care of older siblings. By its very nature, parental leave is intended to cope with times of particular stress or change in the family.

**Implementing work-life balance**
It goes without saying that there aren’t any "magic wand" solutions when it comes to promoting the work-life balance. However, certain arrangements can be put in place to ensure:

- The continuity of work
- Adequate monitoring and supervision
- Good communications with staff working flexibly
- Equitable arrangements for all staff (i.e. not implementing flexible arrangements only for those with families)
- Protection of existing rights and benefits

Superficially, most of these working practices appear to benefit the employee, whilst potentially causing problems for the employer. The point is that, when implemented as part of a holistic approach to new ways of working, improved work-life balance for staff can be delivered alongside tangible business benefits.

**COMMUNICATING AND MANAGING CHANGE**

**Sharing the vision**
Many difficulties in staff relations arise simply because of poor communication. Even if there is bad news, sharing it with the workforce at an early stage helps ensure reasonable co-operation when the time comes for change.
In most successful organisations, the ambitions of all stakeholders, including managers, staff, shareholders and customers, are aligned. This is true of all sectors. Few people want to work in an organisation that is behind the times in its facilities, technologies and working practices. Staff who learn new skills and have worked in modern cultures and environments are themselves more employable.

If managers are starting to consider implementing the ideas in this Toshiba Guide, communicating the news to staff at an early stage will help avoid difficulties later. Also, stressing that the aim is to improve the performance of the business and ensure the organisation remains the employer of choice in its sector, will help dispel any rumours that the project is all about cost-cutting.

**Raising awareness**

In general, UK managers are less technology-aware and more technophobic than their counterparts in the USA, Germany, France and the Nordic countries. There is sometimes a fear that they will diminish their authority by exposing their ignorance to subordinates. This situation is compounded by technology managers often being poor communicators, and lacking business awareness and skills. In effect, the worlds of technology and business management are alien to each other.

Occasionally, it is said, "technology is too important to be left to the IT manager". For this reason in particular, a good starting point is to raise awareness of Information Age issues amongst senior managers and show how other organisations, with which they can identify, are making more effective use of technology.

**Consulting and involving staff**

Staff consultation needs to be genuine and must occur before there is a fait accompli. This way, staff feel involved in the change programme. In addition, those at the "front-line", sometimes called the bottom of the organisation, may have the best ideas – as well as being the leaders of the future.

Techniques can include awareness workshops that build on senior management programmes, departmental "away days", face-to-face interviews and structured staff surveys.

It is vital that survey work is preceded by briefing events. This ensures that the terms and concepts to be used can be explained to staff, and provides an opportunity for questions.
If the organisation has an Intranet, this can be used as a highly effective tool for staff consultation. Those who do not have access to a PC, such as catering and security personnel, can receive paper-based questionnaires. The particular circumstances of each organisation will demand different questions, covering such areas as:

- Life-style and work-home balance
- Attitudes to different forms of flexible working
- Working time
- Aspects of working life
- The working environment
- Technology and communications
- Impact of flexible working on the business

Surveys should carry the authority of a senior figure, such as the Chief Executive or Human Resources Director, and assurances need to be given that the information will remain confidential.

Where possible, questions should be structured for easy analysis, using for example, multiple-choice answers. The facility for free-form comments can also be valuable – our experience is that many respondents will put considerable effort into suggesting ways in which the performance of the business can be improved.

**An illustration**

The following examples are taken from a survey carried out in the London Head Office of a large UK organisation, within the context of a project to attract and retain good staff.

Question: From a personal perspective, when would you value the following changes to your working arrangements?

![Bar chart showing responses to the question about changes to working arrangements.](chart.png)
Question: What is your attitude to the following flexible working options?

The results here are not atypical for a city-based employer. Flexible working hours and the ability to spend 1 to 2 days per week working at home is an attractive option for many people. From the survey work, it becomes possible to assess what factors, such as travel-to-work distance, types of work undertaken and domestic considerations, influence attitudes to taking up flexible work.

In this organisation, an analysis of these and a wide range of other questions, coupled with extensive and valuable freeform comments, built a strong case for introducing new working practices – to the benefit of the business and its people.

Question: How long is your daily return commute journey?
Building a shared agenda for change
Awareness workshops, team meetings, face-to-face and structured consultation, combined with case studies, visits to other organisations and clarification of business and personal benefits, can all build a powerful movement for change.

Translating this into a practical programme involves working with operational, facilities and technology managers to develop a strategy.

It is a good idea to maintain staff involvement throughout this process, for example co-opting team members into working groups.

Piloting change
Piloting and "quick-wins" are excellent ways to validate ideas for change. Most concepts for new ways of working can be piloted without incurring high costs or making irreversible changes.

The idea of a pilot is to prove – or disprove – that a change should be adopted. It is vital, therefore, that pilots are carefully monitored. Measuring relevant parameters before, during and after, or by comparison with a control group, can do this.

Often, the consultation process will identify quick-wins that do not require piloting. These can also lend credibility to the project amongst managers and anyone that remains sceptical.

Training for flexible working
In addition to being assisted with awareness of issues relating to the new information and communications technologies, information managers and staff need to learn new skills and attitudes in order to work effectively in the new environments.

Training requirements should come out of a needs analysis, which should in turn, result from a thorough understanding of the new working locations, working practices, business and communications processes and technologies.

The following outlines some areas that, in many cases, are not addressed when it comes to training, and can, therefore, result in difficulties:

- Managing a distributed workforce
- Self-supported working
- Effective time management
- Supporting a team
- Using remote access technology
In addition, training will often be needed in the use of applications such as groupware, Intranets, advanced telephony and knowledge management.

**POLICIES FOR FLEXIBLE WORKING**

Personnel departments are normally responsible for developing and issuing policies relating to working arrangements and practices. They translate these policies into practical procedures and issue guidelines to support their implementation.

In some organisations, this information is contained within the staff handbook. Nowadays, the handbook often exists on the corporate Intranet, where the latest version is always available for consultation.

The following sections of the Toshiba Guide are intended to provide initial checklists for human resources managers dealing with changing policies. They should help to develop personnel policies that are appropriate for the different forms of flexible working.

Of course, given the diversity of both employers and working practices, it is impossible to create an exhaustive list, and for some organisations, there may be certain issues that are not covered.

The checklist is most relevant during the piloting and transition phase, when different forms of flexible working are being evaluated and some staff are still working conventionally. In the longer term, the idea is that the whole organisation will adopt greater flexibility and, as a consequence, policies can be simplified.

Further clarification on some of the policy issues appears in the subsequent sections, and other relevant material can be found in chapter 3 (Facilities) and chapter 4 (Technology).

<table>
<thead>
<tr>
<th>Contracts of employment</th>
<th>• Are there conditions in employment contracts which are no longer relevant? For example: specifying the place and hours of work, specifying a requirement to be able to drive, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Do travel-related benefits need reviewing?</td>
</tr>
<tr>
<td></td>
<td>• Note: Care should be taken not to attempt to change contracts of employment unilaterally.</td>
</tr>
<tr>
<td></td>
<td>• Note: Other than where people are to work mainly from home, only visiting an office occasionally, the stated place of work should generally remain the office for Inland Revenue purposes.</td>
</tr>
</tbody>
</table>
| Standard practice | • As part of normal working practice, should all staff normally be expected to work flexibly as job responsibilities demand? (This may mean occasionally working in a different location or to non-standard working hours.)  
• Does the employer endeavour to minimise any domestic impact of this requirement? |
| --- | --- |
| Working time | • Are there core hours when all staff are expected to be available for work unless sick, on leave or otherwise absent? (For example: 10.00am to 4.00pm Monday to Friday.)  
• What are the hours when office services and staff access for work are available?  
• When is attendance required at the office, if at all? (For example at least during core hours 2 days per week?)  
• How are actual times at the office agreed in advance? (This is important not only for managers and colleagues, but also for desk management)  
• What are the minimum and maximum working times? (For example, minimum of full contracted hours each month, maximum of 48 hours per week)  
• What rights do line managers have to require attendance at the office on specific days and at specific times? What notice do they need to give?  
• Are timesheets required, showing location of work, days taken as annual leave, sickness and other absences? What are the submission and approval mechanisms? |
| Working location | • Where are staff expected to work when they are not in the office? (For example when they are at home, at a client’s site or in a telecentre, etc)  
• Should staff working away from the office be accessible by phone and e-mail at all times? |
| Health and safety | • How are risk assessments carried out?  
• What are the respective responsibilities of the employer and employee? |
<table>
<thead>
<tr>
<th>Category</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eligibility</td>
<td>• Who is eligible for flexible working? Why is this fair?</td>
</tr>
<tr>
<td></td>
<td>• Are there other forms of flexibility that may be available for a wider group of staff? (For example flexitime only.)</td>
</tr>
<tr>
<td>Variations</td>
<td>• Who is authorised to vary policies and what are the processes?</td>
</tr>
<tr>
<td>Occasional/temporary arrangements</td>
<td>• What are the arrangements for sanctioning occasional or temporary variations to normal working practices?</td>
</tr>
<tr>
<td></td>
<td>• Note: Flexible working should not be placed in a straightjacket.</td>
</tr>
<tr>
<td>Termination of arrangements</td>
<td>• Will flexible working arrangements need to be suspended by line managers where business requirements and/or performance warrant it?</td>
</tr>
<tr>
<td></td>
<td>• Note: Individuals' circumstances may change, or flexible working may not suit them, in which case they should be able to return to conventional arrangements.</td>
</tr>
<tr>
<td>Provision of facilities in the office</td>
<td>• Will the employer provide a permanent office desk for every staff member, especially where work patterns warrant shared facilities and office space?</td>
</tr>
<tr>
<td>Provision of facilities at home</td>
<td>• How will the employer provide, or subsidise the costs of, equipment to allow staff to work effectively and safely at their homes?</td>
</tr>
<tr>
<td></td>
<td>• How will this equipment be installed and supported? Will the employer have right of access to the equipment?</td>
</tr>
<tr>
<td>Insurance and care of office</td>
<td>• Who is responsible for the insurance of equipment, premises and third-party sites, etc?</td>
</tr>
<tr>
<td></td>
<td>• Note: Employees should be expected to take good care of company equipment.</td>
</tr>
</tbody>
</table>
SELECTION/RECRUITMENT FOR FLEXIBLE WORKING

Factors in selection
Selecting people who will be involved in initial flexible working pilots and programmes often generates heated discussion. The first time around, different considerations come into play, as it requires existing staff to work in a different way. However, in principle, future recruitment should be less problematic, as the new recruits have not experienced life under the previous "inflexible" culture. Nonetheless, their previous work experience and preferred methods of working may limit their adaptability.

Personal suitability is only one variable in the selection. Other variables are:
- Organisational environment and culture
- The suitability of the remote environment
- Task characteristics

All of these need to be addressed in the context of the wider change programme.

Specifying personal characteristics
In any organisation, general recruitment, selection for new tasks and promotion often involve some kind of assessment of personality, sometimes including psychometric analysis. It is quite natural that human resources practitioners may see some merit in

| Confidentiality | • Are there rules or guidelines regarding working in public places?  
|                 | • Note: Employees should take care to protect company information. |
| Payment of expenses | • How will the employer compensate staff for any additional costs associated with working flexibly?  
|                 | • How, if at all, will the employer benefit from any cost savings enjoyed by the employee? |
| Training | • What training is offered in flexible working, including health and safety issues?  
|                 | • Is this training compulsory? |
applying this to establishing suitability for flexible working. In addition, there are numerous publications that outline desirable personality traits. There is even software that conducts teleworking-focused tests.

However, this is an area where it is hard to be precise. Once again, it is necessary to raise the issue about whether flexible working is for the whole of a job or only certain functions.

Unfortunately, much of the advice that is currently available is simply banal! According to the UK Department for Education and Employment, teleworkers should be:

- Mature
- Trustworthy
- Self-sufficient
- Self-disciplined
- Good time managers
- Good communicators

This is no doubt right, but to assess the value of such advice, ask yourself which of your employees do you want NOT to exhibit these characteristics!

If you are employing people whom you find immature, untrustworthy, undisciplined and poor time managers, etc, the question arises why you are employing them at all.

**In almost all cases, specified attributes for flexible workers are only what you would expect from the best of your workforce as a whole.**

So, unless you are content for telework to be available as a privilege, or as an option for a kind of workforce elite, then **the issue is not so much about selection on a personality basis, as about how to raise standards and how to prepare people for a different workstyle.**
MANAGING AND WORKING ‘REMOTELY’

If the management style is not already focused on results rather than processes, this will need to adapt. A high degree of trust between the manager and the employee is also needed, and where this is lacking, it is likely that working outside the office is going to be problematic on both sides.

Some aspects of management that are taken for granted in the conventional office environment need to be treated more explicitly in a remote working situation. In particular, staff need:

- Clear performance targets and short-term goals.
- Regular feedback on performance and positive reinforcement.
- Regular communication and team meetings
- Phone calls with supervisors and colleagues to include some personal or social content, and not purely business content

Electronic communication methods should be user-friendly and accessible, ranging from adequate remote access to shared folders and the Intranet, to the ability to send and retrieve e-mails without undue difficulty. The new multimedia collaboration tools and unmetered Internet access considerably enhance the value of electronic communications, especially for less structured communications.

We feel it is important to note that too much use of technology can isolate people from colleagues and business partners, and steps should be taken to ensure teams continue to meet together face-to-face.

The good news is that, with transactional work carried out electronically, these face-to-face meetings can become social, enjoyable and highly productive.
Chapter 6

Employability and access to work
Many people are excluded from work on account of their domestic circumstances or the physical problems they face in travelling to a place of work. The new information and communications technologies can overcome many of these constraints by bringing work to the worker. This can happen as long as organisations are aware of the possibilities, and are prepared to break out of traditional ways of thinking and adopt new "location-independent" ways of working.

This chapter aims to demonstrate how Information Age technologies can be used to promote equal opportunities and allow employers to tap into the skills of many workers currently disadvantaged in the labour market.

"GOING TO WORK" - AN OUTDATED CONCEPT?

Leaving home to go to work became an accepted norm in the industrial age, and today, in an era of mass transit systems and personal transport, travelling long distances is commonplace. However, many of the difficulties faced by individuals who are disadvantaged in the workplace are linked to the imperative to "go to work".

Restricted mobility

As a general rule, we accept the disadvantages that routine travel to work brings, in return for the economic benefits. But there are many groups in society whose mobility is restricted, typically through:

- Temporary illness or disablement
- Permanent disability, or long-term illness
- Childcare responsibility
- Caring for sick or disabled relatives
- Not owning a vehicle or not being able to drive in an area where there is a "public transport vacuum"

Amongst those classed as seeking work, men make up the majority of the first two of these categories, while women dominate the latter three.

Today, there is an increasing public policy focus on such groups within the context of analysing and seeking remedies for social exclusion. Clearly, the culture of commuting remains a major contributor to social exclusion in these instances.
Work follows the worker
The use of information and communication technologies offers a flexibility of location that can help overcome mobility restrictions. The primary advantage is that the rigid connection between work and a physical workplace is severed. In effect, modern IT and telecomms allow access to work even when physical access to the workplace is problematic.

Work may be undertaken either at home, or closer to home. In many cases, people with restricted mobility may be able to work in the "normal" workplace for some of the time – and indeed they may prefer to – but for medical or caring reasons, will not be able to sustain a full working day, or work there every day.

Equalising opportunity
A key point is that Information Age technologies may be used as a vehicle for equalising opportunity. This has knock-on implications for human resources practices, particularly in relation to sex and disability discrimination practices. Case law is beginning to develop in the US in this regard.

CURRENT PRACTICES
Opening doors to employment through flexibility
Flexible, or at least non-standard working arrangements have been common for many years amongst people with caring responsibilities or disabilities. Mostly, these have taken the form of temporal flexibility, that is flexibility in the number and arrangement of working-hours. Examples of this include part-time working, term-time working, job-share, annual hours and flexible daily hours.

Flexitime
This form of working is usually classed as “flexible”, in that the hours of work vary from the 9 to 5 norm, and are tailored to suit the needs of the employee, while still satisfying the requirement of the employer.

One characteristic of modern "flexitime" schemes is that it puts greater responsibility into the employees' hands for organising their work. There are a number of models for this, and a variety of methods for monitoring both hours and performance.
Flexiplace

"Flexiplace" schemes, as have been operating for many years at Oxfordshire County Council, take flexitime a stage further. In fact, they are, in many ways, a natural evolution from it.

Flexiplace allows employees to organise their work more effectively not only in terms of when it is done, but also where it is done. In particular, it allows employees to eliminate unnecessary journeys back to base, and to avoid travelling at congested peak periods. It also allows them to seek the most appropriate location for different types of work. To a certain extent, flexiplace can operate without significant use of Information Age technology, but using it greatly increases efficiency and integration.

Reducing stress

One key aim of such new ways of working is to reduce stress. Stress in the workplace is a serious and costly business. The UK Health & Safety Executive has calculated that 90 million working days were lost in 1998 through stress-related illness, at a cost to the nation of £5.2 billion.

Recent court cases have established that employers can be liable if they fail to identify and act to remedy stress in the workplace. Eliminating difficult journeys and allowing work to take place in less stressful environments are two practical options. It follows that failure to allow this, where it is a viable option, could have serious consequences.

Achieving a home/work balance

A primary source of stress is coping with conflicting roles. These often collide most severely at the home/work interface. Today’s worker is frequently employee, parent, chauffeur, nurse, homework mentor and elder-care organiser. Rigid separation of home and work roles is usually expected, but in practice, can be difficult. Children get sick, childminders don’t turn up, work spills over into the evenings.

The result is that individuals can experience extreme degrees of stress. They feel that whatever they are doing, somebody is being let down, and are under constant pressure to move on to the next role. Incorporating time-wasting travel into this multi-skilled, multi-role lifestyle adds to the pressure – and as we all know, commuting itself can often be a highly stressful experience.
Many home-based telework schemes include "achieving a better home/work balance" amongst their objectives. In most cases, the outcome is less stressed, more productive workers, and in particular a working environment which is more amenable to people with demanding caring roles, or who find travel or sustained work in one location physically challenging.

**Overcoming geographical barriers to work**

In the instances considered so far, the access-to-work difficulties relate to constraints that can, at times, make travel to work difficult. The assumption is, however, that a journey from home to work is, in principle, possible. There are instances when the distance from the workplace is too great for a viable daily commute, and in such circumstances, the new information and communications technologies help in two distinct areas:

- Retaining and recruiting key staff, where the employee or prospective employee lives far away or intends to move further afield. It may be that the partner of a valued employee has to move for their work. Rather than lose the employee, it is becoming increasingly common for organisations to come to new working arrangements that involve teleworking. They may work from home or out of a local office. Sometimes hybrid arrangements emerge which involve staying over for a couple of days near the main office while working the remainder of the time remotely. Retaining the value of investment in a highly qualified employee is a key factor for employers in enabling location-independent work opportunities.

- Finding a route into the jobs market in less accessible areas, when there are only limited recruitment opportunities locally. The reasons for highly suitable employees staying in the area may be compelling, and organisations can extend the labour market from which they recruit by enabling remote working opportunities.

The position for the employee in these two situations is likely to be very different. In the first case, the employee is a known quantity and is in demand. In the second case, this might not be so, and how such workers market their skills and find work is a key consideration.
Enabling work to find its way electronically to rural areas may be crucial to their survival, particularly in relation to the more remote rural communities.

Public sector agencies, who are both employers and policy makers, play a double role in this respect.

**Industrial injury**

From the age of 50 to a pensionable age, disabled employees are three times more likely to be without work than non-disabled people of the same age. This is higher than the ratio for economically active disabled people as a whole. Often disabling injuries sustained at this age or the onset of illness inhibit the ability to work, and in effect, lead to the end of a person’s working life.

However, this need not be the case. A more flexible approach to location and hours, plus appropriate retraining, can overcome the need for enforced premature retirement or having to take menial work nearby which fails to make use of the individual’s skills or potential.

From the employer’s view, it is necessary to consider the benefits of retaining trained and skilled staff and the cost implications of having to recruit and train new employees. In many cases, accommodating the needs of an injured employee may well cost considerably less.

**PUTTING THEORY INTO PRACTICE**

**Employees with disabilities, working from home...**

There are increasing numbers of people with disabilities and with responsibility as carers working from home using information and communications technologies. The AA, for example, has created very inclusive work practices which assist employees with special needs, and while it has retained its large office-based call centre operation, it is also using a network of home-based teleworkers

**...Or from telework centres**

Many disabled workers feel isolated by their disabilities and actively want to leave the house in order to work. One option is teleworking centres adapted to their needs. The EC COMBAT project in the late 1990s set up call-centres for employees with disabilities in Dublin and Barcelona.
One feature of these has been the incorporation of appropriate assistive technology to adapt equipment to the particular requirements of employees. The term "disability" covers a multitude of conditions and needs.

It is often argued that the word "disabled" is misapplied to employees. It is the workplace which is disabling – the workplace is designed without regard to the needs of society as a whole, and effectively excludes people who interface with their work in different ways.

**Parents of terminally ill children**

Huge demands are placed on parents of persistently or terminally ill children. One organisation set up to deal with this is the Nigel Clare Network Trust (NCNT), named after two children who died after long illnesses and many years of caring by their parents. The Trust helps parents and employers adjust to the demands of long-term caring, by providing equipment and support to work from home.

**All parents**

Similar, though less critical considerations apply to all parents. A report by the Institute of Public Policy Research found that work patterns are the single most important determinant of fathers' relationships with their children: 82% of fathers work full-time, for an average 47 hours a week, not including travelling time. This situation has led to what has been called "a deficit of women in the workplace, and a deficit of fathering in the home".

Other research has found that one in three people caring for an elderly relative also has children under sixteen.

The DFEE Managers’ Guide to Teleworking recommends teleworking as a way to overcome such problems, partly on the basis that it allows workers to juggle the time of work around other responsibilities. This may be true of some work, but certainly not all. As indicated earlier, being at home or being nearer to home, does not allow the employee to perform two roles at once. However, it does considerably ease the problems associated with organising childcare, for instance.

**Retaining key workers**

As one might expect, telework is increasingly common in Sweden and Finland, where geographically dispersed populations, advanced telecommunications and progressive social models combine to encourage innovative working practices.
Furthermore, it is increasingly common for organisations in the public sector to offer teleworking as an option to retain valued staff when they move further away.

**Being in lots of places at once**

In 1995, the Swedish Culture minister set up a remote office to cope with the different demands of being a constituency MP and a minister – she was also a working mother. Being in touch with all areas of her work wherever she was based was critical.

In the UK, one of the most “wired” MPs is Paddy Ashdown. He manages a highly itinerant life and separate roles in his constituency, at Westminster and, formerly, as party leader, by extensive use of Information Age technologies. However, it is not only politicians that have the imperative to be in touch with several locations at once.

**FUTURE DEVELOPMENTS**

**Portfolio man and woman?**

The “flexibilisation” and “casualisation” of the workforce are widely predicted to continue, with the decline of having a job or career for life. Tomorrow’s successful employee must be adaptable, willing to learn new skills and change jobs numerous times, and to take on varying kinds of work at once.

The other demands in our lives tend to be less flexible and thrive on security rather than insecurity.

If workforce trends emerge as predicted, workers with marketable skills who are comfortable taking on work from a variety of sources, mediated through Information Age technologies, have a head start.

**Phased retirement**

Society has an ageing population. This, combined with decreasing numbers of younger people to support an increasingly dependent population, means that there are likely to be trends towards phased retirement. This dovetails with moves to combat ageism at work.

Older workers, who are willing to work flexibly, are likely to find themselves highly marketable, particularly if they can take work from anywhere using electronic communications.
Undertaking reduced amounts of regular work, or intermittent project work, are possibilities which are enhanced by opportunities for location-independent working.

**Disability discrimination case law**
The Disability Discrimination Act requires employers to make "reasonable accommodation" for the needs of workers or applicants for work with disabilities. This and other terms in the Act are likely to be defined by a mixture of ministerial decree and case law as it emerges through tribunals and the courts.

In the US, where the Americans with Disabilities Act (ADA) has similar phrasing, recent cases have specified that teleworking may, in certain instances, qualify as a "reasonable accommodation". One example is the case of a disabled worker required to travel long distances when her firm downsized. Her right to telework was supported by the courts. Another decision supported the right of a woman who experienced complications during pregnancy to work from home.

How Information Age technologies can be used to implement ‘reasonable accommodation’, by extending the workplace beyond its physical confines, is worth thinking about in advance of the case law.

**The Trojan horse for innovation**
It is interesting to note that innovations brought in to help people with disabilities often have wider applications, and are taken up on a larger scale. The typewriter, which was originally intended as an aid to blind workers, is a prime example.

People with disabilities working remotely, whether from home, site-to-site or teleconferencing at meetings, will set practical examples that others will follow. It may be down to them to demonstrate how effectively work can be done more flexibly.

**Not all good news, perhaps**
The use of new technologies to provide access to work, where previously it was problematic, has many benefits. However, bringing work home can create its own set of problems. In effect, blurring the division between home and work can have a negative impact as well as a positive one, by bringing the stress of the workplace into the sanctity of the home, or instilling a feeling that there is no escape from work. Dealing with these issues forms part of the human resources and management challenges presented by new ways of working.
PROMOTING BEST PRACTICE, TRAINING AND HELPING WORKERS TO MARKET

The key issues to address in the use of new technologies for promoting access to work are:

• Spreading awareness of the realistic possibilities, amongst both employers and those in search of work
• Analysing the labour market in terms of people who are "excluded" from work by constraints on their access to workplaces
• Establishing best practice and guidelines for promoting equal opportunities for employment
• Marketing the skills of workers who are literate in information and communications technologies
• Training or retraining for electronically mediated working
• Modifying recruitment policies
• Making a commitment to developing enabling workplaces – and ones that extend electronically beyond traditional locational barriers
Chapter 7

Environmental sustainability
“Sustainability” has become one of the buzzwords of the new Millennium. Its definition has been extended to include all sorts of things that various interest groups find valuable. But at the heart of the concept is the following principle – the way in which society conducts its affairs should be in the best interests of the environment and society as a whole, and the world we leave to our children should be at least as healthy as the one we inherited.

It is in our work, and in the way we work, that human impact on the environment is often at its greatest – and at its most destructive of non-renewable resources, species and habitats. Re-evaluating the way we work, the places where we work and how we get there, are an important part of seeking to work more sustainably. This goes alongside other activities focusing on waste reduction, recycling and finding more environmentally-friendly components for products.

The aim of this chapter is to explore the wider implications of working with Information Age technologies and linking the business benefits to other socially desirable considerations.

HOW TECHNOLOGY CAN PROMOTE SUSTAINABLE WORKING

Moving electrons rather than molecules

The new technologies can contribute to sustainability because location-independent working and electronic delivery of services hold out the prospect of both people and things moving less. Activities and transactions that are conducted by “moving bits rather than molecules”, occupy less road space and consume fewer resources.

Doing business online

The main areas of online activity that could have a traffic/energy reduction effect are:

- Telecommuting – eliminating the commute trip at least some days each week by working at or nearer to home
- Other forms of teleworking – eliminating trips by teleworking between sites, whether fixed, mobile or from client sites
- Online financial services such as home banking
- Online shopping
- Online entertainment services
- Online learning

In principle, all of these have the capacity to reduce the need to travel. Trends already indicate increases in these kinds of activities. Where they create efficiencies or open up new markets, businesses are well advised to consider moving in to them.
On the one hand, the environmental benefits are a welcome spin-off from the business benefits. On the other, they can be used to boost the image of the organisation as being both technologically and environmentally progressive.

**Digital technology for traffic reduction**

A number of studies have projected the impact of online working and services on traffic. One of the most recent, Motors and Modems Revisited (RAC Foundation, 2000), projects that if current trends of new technology uptake continue, traffic growth will be reduced as follows:

<table>
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<tr>
<th></th>
<th>2005</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commuting</td>
<td>10%</td>
<td>15%</td>
</tr>
<tr>
<td>Car business travel</td>
<td>3%</td>
<td>5%</td>
</tr>
</tbody>
</table>

Traffic growth, it seems, is seen as being at a lower level than the government’s current predictions. For an organisation, the aim should be to contribute to traffic reduction - largely from the point of view of reducing costs.

Many studies have been carried out on the travel behaviour of home-located employees. A recent study by BT into their own staff found home-based workers reduced their commute travel by an average of 3,149 miles. Most studies find mileage reduction between 2,000 and 3,000 miles per year.

A summary of the research on traffic effects can be found in the article Travel Reduction and Teleworking: “what we know and what we don’t” which can be found on the flexibility web site. So far, the conclusion from the research is that there is strong evidence that location-independent working can substantially reduce travelling, both for individuals and for organisations. The debate now lies is in the global effect.

**Complex trends**

Trends in the development of new behaviours amongst organisations, employees and consumers are likely to be complex. The new ways of working will not necessarily displace more traditional ways of working. Wealth creation in the “immaterial” (electronic) economy, may well boost the "material" (traditional) economy. In effect, while the growth of the former may outstrip the latter, both could expand and provide increased employment opportunities.
Choices can be more or less sustainable

The point is, different practices in working and in service/product delivery, might reduce travel and energy consumption, or not. New technologies make things possible, but there are still choices to be made.

While the future remains volatile and unpredictable, employers and organisations have to make those choices, and the sum total of those choices will influence the type of society we create. And, by affecting how work is organised and how services are delivered, those choices can be more – or less – sustainable. It requires employers and public agencies to keep an eye on the "environmental bottom line" - asking, "is this activity sustainable or not?"

The elusive paperless office

The “paperless office” is a goal that forever recedes into the distance as we advance towards it. IT, as we all know, often generates paper as much as replaces it.

However, in terms of sustainability, it is helpful to think of the “paperless office” as a kind of Holy Grail, a goal that should be pursued.

One aim of the introduction of online processes should be the elimination of wasteful paper processes. Many organisations are doing this and key elements are:

- Using email to replace memos – and these emails should not be printed, unless absolutely essential
- Developing an Intranet – with manuals, directories and widely distributed corporate information, etc. For example, uploading an internal version of the World Wide Web, so that information can be updated from a single point and paper circulation be virtually eliminated
- Working collaboratively online – where shared electronic files can be worked on by multiple users, bringing an end to the slow process of distributing paper files
- Sharing information electronically before meetings – rather than dispensing hard copies before and during meetings
- Reducing the amount of paper at the interface with customers, clients and suppliers, by moving towards EDI, Extranets and Internet-based services

Working online can be promoted as much as an environmental initiative as an efficiency one.
EXAMPLES OF "TRANSPORT SUBSTITUTION"

US Telecentres
Telecentres established around major conurbations in the US by Federal Agencies (e.g. the General Services Agency) and local authorities (e.g. City of Los Angeles), have proved effective in substantially reducing the travel of workers who use them.

In 1995, a study of the impact that telecommuting centres had on travel was conducted. The study, which took place across the US, from Washington to Hawaii, and in Scandinavia, concluded that the number of commute miles saved per trip to the centre, averaged 93.4 miles. While Americans tend to have longer commute journeys, working in the telecommute centres was more attractive to people with longer commutes. The wider impact on total travel, however, has been limited, due to the small numbers of workers involved so far.

Green transport plans
Numerous organisations, such as Boots, and public sector organisations, such as Cambridgeshire Health Authority, have committed themselves to developing Green Transport Plans, which promote environmentally-friendly travel to work amongst their employees. Frequently, research and awareness raising activities are carried out in partnerships with other organisations and local authorities under a banner such as Travelwise or Travel-to-Work partnerships.

Increasingly, such groups, as in Nottinghamshire and Cambridgeshire, are adding in teleworking/telecommuting as environmentally-friendly work options.

The Department for Environment, Transport and the Regions (DETR) now officially encourages travel substitution through the use of information and communications technologies. A recently published guide to Company Travel Plans from the DETR, aims to spread the message via providers of hi tech products and services. The guide is very business focused, emphasising the business benefits. A consensus is emerging that pursuing the business benefits of location-independent working will lead to significant environmental benefits.

Reducing mileage and emissions
It has been established that, for the majority of employees, teleworking does lead to a reduction in mileage and pollutant emissions. The exceptions tend to be amongst mobile teleworkers, for example sales reps, who by eliminating the journey to base, may fit in some extra visits each time they go on the road.
What is less clear, however, is the effects of "latent demand" – that is the new trips generated by:

- Family members now able to use a car previously used for commuting (e.g. driving to the partner’s workplace, or to the children’s school, etc.)
- Other daytime journeys undertaken by the "telecommuter" (e.g. at lunchtime)
- People shifting from other modes of transport to take advantage of road space vacated

Studies on the relationship of uptake of remote working and latent demand are in their infancy, and the jury is still out. However, at present, the balance of evidence would indicate it is appropriate to promote new forms of technology-enabled work as a contributor to sustainability, while employing measures to restrict possible increases in demand from non-teleworkers.

**Energy efficiency in the office**

A study funded by the Department of Employment in Sheffield found that, on average, home-based teleworkers consumed half the amount of energy compared to their office-based counterparts. This was largely due to eliminating car journeys to and from work. However, it was also the case that the economies of scale in energy consumption that one might expect in a centralised office do not, in fact, actually occur.

This is due to the effects of lighting, heating and air-conditioning large energy-inefficient spaces, and having all systems on all the time. By comparison, the extra energy required in the home for teleworking is small. Realising the business and energy reduction benefit, however, depends on not retaining office spaces for people working from home, or people who are regularly out of the office.

**FUTURE DEVELOPMENTS**

**Complex behaviours**

Studies from government, academic and private sectors indicate the growing impact of the new technologies at work and in the home. Whilst the sustainability effect comes largely, though not exclusively, from reduction in the need to travel, life is actually more complex than that. How people’s behaviours change with the introduction of new technologies is very unpredictable.
To take an example, cinema in the UK came close to dying with the advent of television. The arrival of video was expected to finish it off. Instead, an increase in the number of TV channels, the development of a huge video market and the arrival of other screen-based activities such as video games has coincided with a major revival in cinemas. People are travelling more to go to the cinema than they were a decade ago.

Similarly, new phenomena, such as online shopping, will not necessarily lead to a decline in "going to the shops". Both sectors could grow simultaneously and indeed, as this chapter indicated earlier, the growth of online activities can be used to promote traditional forms of commerce. The upshot may be that people will actually travel more, not less, in some areas of activity.

**Anti-car measures to come**

The indications are that the developments of trends to online activity will coincide with active measures by government to discourage car use. Likely amendments to regulations include:

- Changes to company car tax benefits
- Taxing private non-residential car parking
- Road pricing
- Incentives to use public transport
- Permission for local authorities to experiment with more radical traffic reduction schemes
- Company Travel Plans required as part of planning consent by local authorities.

Given that public enthusiasm for alternatives to the car – public transport, cycling and walking – tends to be limited as a result of the perceived inconvenience involved, transport substitution is likely to have an increasing appeal.

For organisations, the best response is to be ahead of the game, and not to be caught out by regulatory and fiscal measures imposed by government bodies. For instance, the development of a Company Travel Plan, involving location-independent working, can support plans which might otherwise fall foul of planning authorities. One such example is with expansion on existing site, which might be refused on traffic generation grounds.
Green audits
A growing tendency in organisations, particularly in the public sector, is to undertake an “Environmental Audit”. This involves examining all the work processes to establish the impact they have on the environment. Typically, the focus will be on energy efficiency, waste, and purchasing policies. However, increasingly, it is likely to include examination of the effects of location and communications. Best practice benchmarking is likely to emerge.

SUSTAINABILITY – THE WAY FORWARD USING NEW TECHNOLOGIES

Awareness
Of course, information and communications technologies does not necessarily make all business processes sustainable, nor does it necessarily make them more efficient. However, there is strong evidence that it can be used to make organisational and consumer behaviour more sustainable.

To achieve this, there has to be awareness at the outset when introducing new ways of working and online delivery of services and products. The “sustainability effect” can be built into business plans for persuading investors, partners or employers of the worth of a project, but a great deal needs to be done to raise awareness of the issues and possibilities amongst employers and employees, and amongst planners and policy makers.

Setting targets
Within an organisation, sustainability targets can be set. Too often, however, the milestones and outcomes of a sustainability project are yet more reports (using yet more paper!). Instead, these targets should take some practical form, such as:

• Reducing work trips by n by the year x, or reducing in-work travel by n% per year.
• Reducing the company’s energy bill by n% per year
• Analysing the number of workers who could work from home, for how much of the time, and creating targets for the phased introduction of new ways of working
• Setting targets for moving towards the “paperless office” – n% of paper transactions to become electronic by the year x

But, of course, target setting does not, by itself, deliver the benefits. Many well-intentioned organisations, especially in the public and voluntary sectors, have made these commitments and set up internal working groups, yet failed to achieve any significant gains.
Being - and marketing - the "green and forward looking company"

In many organisations, environmental issues are delegated to a team that has no influence in the company. Often, the team undertakes pioneering work in partnership with external agencies, but fails to make any real impact on the organisation. Green project work such as supporting tidying-up of the local landscape is good in itself, yet it often fails to touch the core of the organisation – even if it does qualify for a local environment award!

The two ways to make a significant contribution to sustainability are:

• Cleaning up products and processes
• Changing the way people work and travel for work

The second of these is a genuine way to bring the green team in from the periphery. The key principle is to combine business benefits and environmental gains – otherwise efforts are bound to be marginalised.

Being socially and environmentally responsible, apart from its intrinsic value, can also have a powerful marketing impact. It can help raise the profile of organisations and it can help to sell products and services. It can also make the organisation more attractive to potential recruits. But people soon see through spin. It all works much better if the messages are underpinned by tangible good practice.
The flexible location of work using information and communications technologies has important implications for promoting regeneration in disadvantaged areas. Lack of local work opportunities is a key characteristic of such areas, both urban and rural.

This chapter should be of particular interest to managers of agencies involved in regeneration partnerships, including local authorities, regional development agencies, economic development agencies, employment services, housing associations and other employers in the not-for-profit sector.

However, private sector employers should also note the opportunities for working within the context of regeneration initiatives, in order to achieve efficiencies and to maximise the benefits from flexible working.

**AREAS IN TRANSITION**

**Decline of traditional industries**

The last 30 years has seen the decline of many traditional industries in the UK. Predominantly, these are the industries that underpinned Britain's global commercial supremacy and made it the "workshop of the world". Coalmining, the steel industry, and shipbuilding have contracted massively in the face of overseas competition. The defence industries have suffered similarly, with the end of the Cold War. Manufacturing industries, which have been closely associated with these formerly dominant industries, have declined with them – engineering in particular. Agriculture and fisheries have also been in decline.

Where industries have survived, automation, restructuring and streamlining mean that enterprises only employ a fraction of the workforce that they did in the 1960s and 1970s. New industries in the service sector and particularly in the retail, high tech and "new economy" sectors, have supplanted traditional manufacturing in terms of relative importance to the prosperity of the nation.

Growth has tended to be concentrated outside the traditional manufacturing heartlands. Even though total unemployment is low once again after the peaks of the 1980s, there remains significant areas of deprivation, suffering high unemployment, a lack of inward investment, and the emigration of skilled workers who seek work elsewhere.
Urban problems
The problems of areas suffering from the decline of traditional industries have, in many instances, been exacerbated by disastrous urban planning policies in the post-war years. Poor urban design, poor quality housing and lack of investment in education and infrastructure are the hallmarks of many of the most deprived areas.

It is all too apparent that a deficit of local services and suitable premises for enterprise characterise many of the housing developments of the 60s, 70s and 80s.

Rural problems
Rural areas have also suffered from the decline of traditional forms of employment, in particular, mining, agriculture and fisheries.

Whilst it is true to say that many of the more accessible rural areas have grown in size as people flee towns to create suburbs with country views, many of the more remote rural areas have seen the emigration of almost all the younger generations. Young people leave to find work, and people with young families leave to find a more suitable place to bring up their children.

In several of these remote rural areas, lack of employment prospects has been compounded by the closure of local services, such as schools, post offices and village stores.

The collapse of public transport serving rural communities since the 1980s, has created a situation where poorer people are left stranded without access to a range of opportunities for employment, learning and community facilities.

Responses to the problems
Regeneration of disadvantaged areas has been high on government agendas at local, regional, national and EC level for many years now. Very large amounts of national and European money have been directed to areas such as Merseyside and the Highlands and Islands of Scotland to stimulate employment and provide opportunity. Typically, programmes have focused on:
• Training and retraining to improve skills levels and promote employability
• Improving the housing stock
• Encouraging inward investment, and encouraging organisations to locate or relocate, through a mixture of fiscal incentives and support measures

The UK government has recently published its regeneration White Paper, Our Towns and Cities: The Future Delivering an Urban Renaissance. A programme is to be set in place offering, to a large extent, an enhanced version of the same, with greater emphasis on improved urban design and greater diversity in planning, to create cleaner, less polluted environments that are designed more for people than for cars.

The new Regional Development Agencies are to play a key role in driving this renaissance.

NEW TECHNOLOGIES AND WORK OPPORTUNITIES

In emerging government policy, RDA economic policies, and EU funding programmes, there is a commitment to developing high tech industries, infrastructure and work opportunities. Some regeneration areas caught the first wave of the high-tech revolution in the 1980s, revolving around large-scale inward investment ventures in manufacturing electronic equipment. Ten years later many of these had closed, unable to compete with competition in the Far East.

Call-centres, attracted by low wage costs and substantial public subsidies, have brought large numbers of jobs to depressed areas in places like Leeds, Merseyside and Fife.

But in many ways, this is only the beginning of the possibilities.

Outsourcing

New possibilities for outsourcing have been opened up by IT and telecommunications. A successful early example arose through the creation of a telework centre in a remote area of Scotland, at Forres near Aberdeen. It was set-up by the IT company, Hoskyns (since taken over by Cap Gemini), with support from the former Grampian Regional Council.

Data processing work, initially concentrating on council tax and parking tickets, provided 80 jobs. Expansion has led to the opening of a number of centres, providing over 500 jobs.

In essence, data processing work can be sourced from anywhere. A few councils in the south of the country have bitten the bullet and outsourced similar processes to the Forres Centre, making considerable savings in the process.
Equally, councils and other agencies involved in regeneration should recognise the possibilities for job creation in their own areas through the development of telework centres specialising in data processing.

**Telework**

Some remote rural areas have successfully promoted telework as a way of bringing work into the area for small businesses and self-employed contractors. Backed by European money, the early development by BT of high bandwidth services in the Highlands and Islands of Scotland, provided the basis for current initiatives.

One example is work-global in the Western Isles of Scotland. Work-global is a teleworking facilitator, which manages a skills register that currently includes the resumés of over 600 highly qualified people based in the Western Isles. Supported by local and regional economic development bodies, their motto is "live local, work global". Their marketing focuses on encouraging organisations to outsource business processes to teleworkers in the islands, and encouraging inward investment through setting up satellite offices and call-centres.

**Satellite offices**

Information and communication technologies can enable functions of an organisation to be located closer to where workers live, and this can have an important regenerative effect.

One local authority has its headquarters in the prosperous part of the county it serves. Every day, a bus is laid on by the authority to bring in around 60 employees from another part of the county – an area that qualifies for special funds for regeneration. Yet, most of these employees undertake work based on using computers and telephones – in the Information Age, the reasons for their daily trip are no longer compelling.

In this instance, as with countless examples of home-based working, one of the key advantages to locating work nearer home is that a greater proportion of these employees’ spending will be "repatriated" to their local community. In addition, other service jobs supporting their location to the regeneration area may be created.
**DECENTRALISING - FOR REAL!**

One striking fact about public sector involvement in innovative Information Age technology projects is that, while they are often willing to support progressive projects in partnership, they are much more reticent about applying the lessons to their own employment practices.

Employees involved in regeneration activities will frequently find that they are based at the traditional headquarters, which may be some distance from the area served. Amongst other disadvantages, this can mean many hours wasted in travel, which could be more efficiently spent working at the front-line.

Effectively, information and communications technologies means that the worker should have their office with them wherever they go, and be able to connect to organisational systems from a local office, on a mobile basis or from home.

**Integrating employment and service objectives**

Apart from greater efficiency, there is another major opportunity to be derived by bringing a closer alignment between employment practices and service objectives.

For example, many councils, sometimes with their partner agencies, are developing "one-stop-shops" for public access to their services. In most instances, this also means extending the organisational IT and telephony networks to the local offices. But in the majority of cases, these premises will not be considered as places to work except for staff who are directly employed there. In principle, such centres provide excellent touchdown bases for itinerant staff as well.

However, such facilities need to be planned at the outset. Often, it can be hard to find additional space for staff touching down. As well as the facilities planning, service level agreements for use and appropriate policies and protocols including booking arrangements, access rights and confidentiality, are likely to be necessary.

The new style of one-stop-shops is only one example. Public sector agencies frequently have large amounts of property, which is under-utilised. This may include schools, community education centres, libraries, community centres, housing offices and depots. These may provide suitable facilities for drop-in/touchdown work facilities, or for larger decentralised functions such as data processing.
Many of these types of premises are evolving through bids into regeneration funding programmes to become public access ICT-based learning centres or "electronic village halls", and so forth. Typically, such projects struggle for new revenue streams after their first year or two. Building in rechargeable work facilities should be considered as a serious option for creating a sustainable venture.

The key point is that the same information and communications technologies infrastructure can be utilised for both service delivery objectives and for enabling location independent working.

Once again, this emphasises the need for a holistic approach, involving not only technology, facilities and human resources managers, but also managers involved in service planning.

**The "triple bottom line"**

Disadvantaged areas often have great need for the services of Social Service departments. Social Services managers should jump at the opportunity to slice about 10% off social workers' business travel, a figure which is typical in such instances, in order to free up time for more client work.

This is an example of the "triple bottom line" in action:

- A win in terms of business benefits
- A win in terms of benefit to the environment
- A win in terms of contribution to the community

**Retaining skills in the community**

One of the key benefits of developing Information Age work opportunities is being able to reverse the skills leakage from disadvantaged areas. The majority of existing projects focus on training or retraining, and increasingly, this involves training in "Information Age skills". Many local colleges, the new ICT-based learning centres and other "telematic" initiatives, are doing a fine job in this respect. The problem is in translating this into jobs that actually make use of the skills. At the moment, people are being trained to migrate.

A cabinet minister in the 1980s advised job seekers to "Get on their bikes" to find work. This is exactly what has been happening, with a steady migration of skilled labour from disadvantaged areas to prosperous areas where there are skills shortages. Only by locating relevant work within these communities can this trend be reversed.
MAXIMISING THE BUSINESS BENEFITS

The emphasis in most of this chapter has been on public sector employers. In many parts of the country, particularly in rural areas and disadvantaged urban areas, they are the major employer. We have outlined the business benefits for such organisations, both in terms of efficient working practices and more effective service delivery to customers.

For private sector employers, there are also advantages in locating in such areas, or outsourcing work to them. Some of the benefits may be similar, for example locating field workers such as sales staff closer to customers.

Although local politicians and officers are often shy about saying so, the key marketing argument for developing business in regeneration areas relates to low expenditure in terms of low labour costs and low property values. In addition, local authorities and enterprise agencies frequently offer grants, subsidies and other kinds of support which are not available in most areas. This includes staff recruitment and training.

Getting flexible, then, need not be limited to introducing flexibility for one's own staff. By overcoming the constraints of geography, the new technologies offer ways to combine maximising business benefits with a contribution to urban and rural regeneration.
This chapter is concerned with the pragmatic issues associated with justifying, launching and managing a flexible working project in the large organisations of today – be they in the business or not-for-profit sector.

Very few projects will enjoy the luxury of a "clean start". More usually, flexible working reaches the agenda in response to a particular challenge, such as a deficiency of space in the building, staff turnover being too high, pressure to reduce fixed costs and commuting disruption.

Whatever the challenge, the starting point is usually to build a business case and sell it to senior management. As with most changes in organisations, investment is required to reap the rewards. However, as indicated in previous chapters, most solutions can be piloted before large-scale investment is required.

As indicated before, successful flexible working programmes bring together human resources, facilities, technology and operational managers around a common agenda of business improvement. Organising and managing such an interdisciplinary team is itself quite a challenge.

**STRATEGIC OVERVIEW**

To provide a strategic overview, it is worth repeating the chart from chapter 2. This shows how co-ordinated work in facilities, technology and human resources areas can deliver a range of benefits.

<table>
<thead>
<tr>
<th>Areas of activity</th>
<th>Integrated change programme improvements</th>
<th>Improvements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Facilities</strong>: Office and &quot;away from the office&quot; facilities</td>
<td></td>
<td>• Effective and efficient service delivery</td>
</tr>
<tr>
<td><strong>Technology</strong>: infrastructure and applications, business processes and communications</td>
<td></td>
<td>• Low operating and administrative costs</td>
</tr>
<tr>
<td><strong>The Human Factor</strong>: Organisation, management methods, working practices, skills and HR policies</td>
<td>are jointly optimised for</td>
<td>• High business efficiency and team / personal productivity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• High staff motivation and retention</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Equal opportunities, environmental and social sustainability</td>
</tr>
</tbody>
</table>
The chart acts as a reference point for the remainder of this chapter. Previous chapters have shown the developments that need to take place in each of the key areas summarised in the left hand box, in order to achieve improvements. Employers will want to see some numbers supporting the benefits outlined in the box on the right. Being able to quantify potential benefits is a key element of building the business case for flexible working and for implementation.

QUANTIFYING THE BENEFITS
We will illustrate by example some of the benefits that have already been achieved by organisations that have embraced new ways of working. These are, of course, not necessarily all achievable at the same time! Most importantly, there is no substitute for detailed analysis in each case. What has been achieved in another organisation can be a useful indicator, but no more.

Effective and efficient service delivery
Many organisations, in both the private and public sector, are keen to improve the ways they deal with customers, clients, business partners and the general public.

Flexible working can contribute to this in a number of ways:

- Operations can be "open for business" for longer hours – even around-the-clock. During anti-social hours, for example, telephones can be answered by home-workers or by people working in different time zones
- Call-centres and switchboards can improve their answering statistics by diverting overflow calls to contingent employees
- Mobile staff can spend more time with their customers and clients, and less time visiting the office or travelling
- Staff can be relocated closer to their markets and customers, yet remain part of the employer’s virtual office

Financial gains can be substantial. It has been estimated that 80% of callers will call a competitor if the phone is not answered or they are put in a long queue. One sales and marketing operation, with a million inbound calls a year, estimated that increasing the percentage of calls answered in three rings from 70% to 95%, allowed them to increase sales by 15% without taking on more staff.
Another organisation, in the public sector, was able to increase the average number of visits to the public made daily by its mobile professionals from 3 to 4, in effect, a productivity improvement of 33%.

**Low operating and administrative costs**

The most visible area of fixed cost addressed by flexible working, is property. Apart from call-centres and other highly structured environments, which already implement shared desk policies and operate around-the-clock, most office buildings are seriously under-utilised (see chapter 3). Even call-centres may run less than half-full during quiet periods.

The transition from a personal to a shared space environment can have a dramatic impact on space needs. One engineering consultancy in the north of England calculated it needed only 30% of its previous space. In fact, it chose to only half its space, creating staff facilities in the process, including a gym. Annual facility costs per employee reduced from £6,500 to £4,500.

Other cost reductions come from lower secretarial ratios and streamlined, paper-free processes, although some of these are, of course, partly achievable in a conventional working environment. In some forward-thinking organisations, staff no longer needed in back-office administrative roles are redeployed into customer-facing positions.

**High business efficiency and team/personal productivity**

Probably, the greatest financial benefits from flexible working result from efficiency and productivity improvements. Yet, they are often difficult to quantify in advance. The point here is, flexible working enables substantial gains, but it is up to managers and their teams to deliver them in the context of new ways of working.

Increasing efficiency implies raising the business output per unit cost. Technology-enabled processes and better communications can deliver real improvements, even in a conventional working environment.

Additional gains attributable to flexible working include:
Additional gains attributable to flexible working include:

- Less time spent travelling on business. According to the AA, the actual cost of business car travel is around 50p per mile. To this, must be added the cost of the employee, who is largely unproductive whilst driving – for an average professional, this is around £20 per hour, or a further 75p per mile at average driving speed. A modest reduction of 2,000 miles per year, per mobile professional, translates into a saving of £2,500.

- Facility to work anywhere and anytime. A similar approach can estimate the improvements in productivity from staff being able to work whenever they want and wherever they happen to be. Common scenarios include working at business partner sites, working at home before or after meetings and working on trains, planes, at railway stations or airports. Based on employment costs of £20 per hour, an extra 2 hours of productivity per week is worth almost £2,000 a year.

Also, the work itself can be substantially more productive. For example, being able to respond rapidly to messages from colleagues or business partners helps avoid "catch-up" time, which many executives estimate as taking 3 to 4 hours per week of their time.

**High staff motivation and retention**

Many organisations report that attracting and retaining good staff in a competitive labour market is a problem, especially in certain sectors such as the IT industry. All else being equal, employees often seem prepared to move for just a modest increase in salary.

Conversely, surveys show that many people put lifestyle and work-life balance above salary in their priorities for a new job. Commuting, especially through congested traffic, or on unreliable, overcrowded trains, is seen as a disincentive.

A number of costs associated with staff turnover that must be considered are:

- The direct recruitment costs for replacement labour
- The direct cost of training new staff
- The low initial productivity of new staff

There are also financial implications associated with knowledgeable staff leaving and joining competitors.
As an example, outsourced recruitment cost via an agency, is typically 15% of the first year's salary. Training a new recruit might cost around £1,000, and productivity for the first six months may average 50% of the ultimate level. On this basis, the cost of replacing an employee on a salary of £25,000 per year, and all-in employment costs of £50,000 per year, would be over £15,000.

Increasing the average stay at an employer from three to five years results in a saving of £30,000 per employee over fifteen years, or £2,000 per year.

Any savings to be gained from not commuting go directly to the employee. These include savings on season tickets, a second car and expensive housing. However, employers may also gain by being able to attract employees who do not need to commute with lower salaries. In London, many commuters who consider commuting a necessary evil, spend over £2,000 per year of post-tax income on their season tickets alone.

**Equal opportunities, environmental and social sustainability**

It is probably artificial to attempt to translate gains in these areas into financial benefits, though aspects of the following approach may be appropriate in some situations:

<table>
<thead>
<tr>
<th>Equal opportunities:</th>
<th>Costs of compliance with legislation by alternative means, access to a higher quality pool of labour.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment:</td>
<td>Local Agenda 21 compatibility, avoidance of green taxes and penalties.</td>
</tr>
<tr>
<td>Social:</td>
<td>Relocation of work into areas attracting grants, low labour costs, access to a high quality and less mobile workforce.</td>
</tr>
</tbody>
</table>

An additional benefit, again hard to quantify, might be associated with positive press comment and other PR activities.

**ACHIEVING THE BENEFITS**

The main components of a typical flexible working project are summarised in the following sections, structured around a number of key themes. These themes can form the basis for interdisciplinary working groups, set up to examine the potential for new ways of working and to make recommendations.
### Share facilities, resources and information

<table>
<thead>
<tr>
<th>Aims:</th>
<th>Move from a personalised approach to workspace, support services and filing to a group or team approach</th>
</tr>
</thead>
</table>
| Benefits: | Better space utilisation (i.e. less space required overall)  
| | Less paper storage - enables location-independence  
| | Streamlined access to information  
| | Reduced vulnerability to loss or abuse of information |

### Work more flexibly

| Aims: | Work wherever and whenever it is most effective to get the job done  
| | Reduce the conflicts for staff between work and home |
| Benefits: | Improved personal productivity and effectiveness  
| | Delivery of services where and when they are most needed  
| | Greater flexibility in resource planning and management - improved staff utilisation  
| | Ability to attract, motivate and retain the best people |

### Get the most out of technology

| Aims: | Exploit to the full the organisation's technology infrastructure (up-to-date workstations, Intranet, integrated messaging, location-independent telephony, remote IT access, etc.) |
| Benefits: | Paper-free processes and distributed team-working  
| | Better internal and external communications, including electronic service delivery  
| | Improved efficiency and effectiveness from location-independent working |
### Streamline processes and reduce paper dependence

| Aims: | • Streamline operations through more effective information and communications management and systems |
| Benefits: | • Ability of staff to concentrate on front-line work rather than administration  
• Improved quality and efficiency as information is shared  
• Reduced paper dependence enables mobility and location-independence |

### Create a flexible modern office environment

| Aims: | • Improve utilisation of office space  
• Create an environment that is conducive to efficient and effective working |
| Benefits: | • Lower property and associated facility costs  
• Improved efficiency, personal productivity, team-working |

### Enable and support working away from the office

| Aims: | • Enable staff to work wherever it is best to get the job done - main office, other office, home, on-site, whilst travelling |
| Benefits: | • Reduced demand for office space  
• Reduced travel - commuting and in-business  
• More time ‘on the job’  
• Improved staff flexibility  
• Better balance between home and work life |

### Equip the workforce for the future

| Aims: | • Ensure managers and staff are fully aware of and able to use the new infrastructure, processes, working environments and practices |
| Benefits: | • Efficiency, productivity, fewer errors, etc.  
• Improved staff motivation and retention |
ORGANISING A PROJECT

Building the business case

A typical scenario is that a human resources, facility or technology manager has chosen to make, or has been tasked with undertaking an investigation into the potential of flexible working, hot-desking, home-working, satellite offices or some other change to working practices that could benefit the organisation.

The investigation process, which we hope will be assisted by this Toshiba Guide, may also include a feasibility study. The next stage is to "sell" the project to senior management. Put simply, this involves justifying the investments in terms of the expected benefits.

However, as with most business investment, the costs come first and the risks and benefits later. Few senior management teams will be happy to commit to investment unless a thorough risk and payback analysis has been undertaken. Also, they will normally want to monitor progress and, if appropriate, be able to terminate and reverse the project if results are not being delivered.

Some of the costs and benefits associated with a project to introduce new ways of working are summarised in the following table. Of course, all situations are different and this should only be used for guidance – in particular there may be specific operational areas of cost or benefit that are not covered.

<table>
<thead>
<tr>
<th>Area</th>
<th>Capital</th>
<th>Ongoing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project management:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project team, consultancy, etc.</td>
<td>Investment</td>
<td></td>
</tr>
<tr>
<td>Facilities:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Office accommodation</td>
<td>Investment</td>
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<td>Technology:</td>
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<td>Remote access infrastructure</td>
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<td>Applications development</td>
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<td>Office technology</td>
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<td>Mobile working</td>
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<td>Human resources:</td>
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<td>Staffing levels</td>
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<td>Training</td>
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In essence, investments must be made in facilities, technology, training and the project itself, and increased ongoing costs incurred in supporting home and mobile working. In return, savings will result from smaller offices and lower staffing levels for the same level of output. Other benefits that we have not illustrated in the table, may result from better customer service, environmental and social gains.

**An illustration**

The following example is taken from a leading consumer products organisation that merged with its main competitor. The decision was taken to integrate all staff into a single operation, based in one of the existing offices. The other office was sold for development.

Around 350 staff were required to work from an office that was already full to capacity with 220. A space audit showed low desk utilisation. Other data, including a staff survey, suggested substantial business benefits from more flexible working practices.

The initial justification for the project was based on space savings alone. The organisation:

- Disposed of the redundant building, saving office facility and desktop technology charges of £6,800 per employee, i.e. £884,000 per year
- Invested in facilities and technology to allow 200 staff to work anywhere, anytime, at an annual cost of £3,500 each, i.e. £700,000 per year
- Invested £140,000 in its IT and telecommunications infrastructure and applications
- Invested £180,000 in remodelling the office with new furniture, new meeting rooms and improved shared space
- Invested £210,000 in project management, consultancy and training costs

An up-front investment of £530,000 resulted in net facility cost savings of £184,000 per year – a payback period of just under 3 years.

Whilst this was considered adequate to justify the investment, greater benefits resulted from productivity and motivational improvements from the managers and professional sales and marketing personnel. With the facility to work flexibly, including from home, staff are spending more time on productive work and less time travelling and undertaking administrative activities. A 10% increase in sales per head has been attributed to the project, equivalent to an annual profit increase of around £500,000.

Finally, it is too early to tell the impact on staff turnover, but initial indications are that the organisation has become the employer of choice in its industry.
The project team
As has been stressed throughout this Toshiba Guide, the greatest benefits are only possible by bringing human resources, facilities and technology managers together around a common agenda of business performance improvement through new ways of working. In our experience, the most successful projects have set up dedicated, autonomous and multi-disciplinary teams under a project leader reporting directly to a chief executive or other senior business manager. In this way, the entire team can be totally focused on the project rather than representing their own disciplines. Also, there is often much to be gained by specialists learning about and gaining skills in other specialisms.

The project plan
Needless to say, the project should be established and managed according to best project management practice, with clear terms of reference, objectives, milestones, success criteria, reporting structures, budgets, contingency plans, and so on.

It is rare for an innovation and change programme not to attract dissenters. These are often people who are set in their ways or scared of change. It is therefore vital that the project communicates effectively to the organisation as a whole.

In our experience, however, there are a number of general points that are helpful to establishing a successful project;

• Create a high level steering group of stakeholders. These can include senior business managers and department heads. Their participation in a steering group meeting, say, once a month, will both encourage buy-in and help deal with issues before they escalate

• Project Intranet. There is normally no reason not to share information with staff at all levels and invite their participation in the project. An Intranet is an effective tool for this and helps reinforce the benefits of paper-free working

• Project area. Bringing the project team together in a project area, and from an early stage, ensuring they practise what they preach, can help give the project visibility. As the project develops, the area could be used for lunchtime seminars, demonstrations from furniture and technology vendors, and drop-in sessions. As decisions are taken, for example on colour schemes and furniture, staff can be invited to register their views
• Name the project. The "flexible working project" or some other such designation can be a mouthful and might be too descriptive if the project broadens its remit to address other issues. Adopting a distinctive and non-descriptive project name helps avoid this and creates a branding for the project that can be used internally and externally.

• Measurement and consultation. It is important to establish a baseline, against which the benefits and costs of the project can be measured. Collecting information on space utilisation, facility and technology costs, staff turnover, recruitment and training costs, is vital. Also consulting with staff, at all levels, for example using the Intranet consultation tool described in chapter 5, can both collect useful information and help people feel included. Measurement and consultation should continue at stages throughout the project.

• Quick wins. Quick wins are usually solutions to known problems that can help give the project credibility and support. It is surprising how often simply bringing together the human resources, facilities and technology people can identify simple solutions in areas that have irritated staff for years. Also, the staff survey may highlight an issue, the resolution of which may have a positive impact way beyond its cost.

• Pilots. These can address individual aspects of the project, such as office layout and practices, paper-free processes, home-working and flexitime. Also, usually at a later stage, entire teams or departments can pilot a full, integrated solution prior to roll-out throughout the organisation. The important point is, most aspects of new ways of working can be piloted, and the results can help reduce risk, shape solutions and build staff support. There is generally no reason to jump directly to a solution without piloting.
Realising the benefits

We end with a warning.

It is easy to call a halt after the new offices are built and the technology upgraded. Employees will be happy with their new working environment and tools, and the quality of the shared team facilities will help dispel any concerns over hot-desking. Yet, the full range of benefits only arises as business processes, working practices, management style and the organisation itself change in response to the opportunities provided by the Information Age.

In fact, as technology continues to improve, there will not be a time when the project can be considered complete. The successful organisations of the future will learn to innovate continuously, not only in their products and services, but also in the new ways of working.

For further details and advice on the information provided in this guide, please refer to the website www.flexibility.co.uk
Glossary
ADSL: Asynchronous Digital Subscriber Line: New broadband, consumer-focused data delivery technology utilising existing telephone systems (e.g. for use with connecting to the Internet).

Bluetooth: A wireless technology for connecting multiple devices (e.g. PCs and mobile phones). Speed of connection is up to 1MB/sec and has a range of up to 100m. Best used for ad hoc connection between devices in a PAN (Personal Area Network).

ECATT: Electronic Commerce and Telework Trends.

GPRS: General Packet Radio Services: A technology employed in digital telephony, which forms a basis for the next generation wireless data communications over mobile phones.

ICT: Information Communications Technology.

IP: Internet Protocol: A network communications protocol, which enables connection to the Internet via a network card, modem or similar device.

ISP: Internet Service Provider.

Metadata: Structured data that describes the characteristics of a resource. It shares many similar characteristics to the cataloguing that takes place in libraries, museums and archives.

NIC: Network Interface Connection/Card.

PCMCIA: Personal Computer Memory Card International Association: A group of companies that sets out standards for expansion devices via PCMCIA PC card slots on portable computers.

SMS: Short Messaging System: Allows the sending of small messages (e.g. text messaging on mobile phones).

SOHO: Small Office Home Office: A term used to describe that particular market segment.
**VPN**
Virtual Private Network: A network that allows a user to send and receive data over the Internet securely (using data encryption).

**WiFi**
Also known as IEEE 802.11b, WiFi is a wireless LAN (or WAN) technology used for connecting PCs to an existing network (via an access point) or for peer-to-peer networking. Speed of connection is from 2MB/sec up to 11MB/sec and has a range of up to 300m.

**3G**
Third Generation Mobile Telecommunications: Scheduled for operational start-up in 2001-2002, applying high-speed data transfer and state-of-the-art radio terminal technology, third generation systems enable multimedia and are currently in the process of being standardised.