

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 on-line

The main areas of on-line 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
- On-line financial services such as home banking
- On-line shopping
- On-line entertainment services
- On-line 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 on-line 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:

	2005	2010
Commuting	10%	15%
Car business travel	3%	5%

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 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 on-line 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 e-mails should not be printed, unless absolutely essential
- Developing an intranet – with manuals, directories and widely distributed corporate



information, etc. put on-line so that information can be updated from a single point and paper circulation can be virtually eliminated

- Working collaboratively on-line – 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 on-line 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 high-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 on-line 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 on-line 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 on-line 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 an 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 do not necessarily make all business processes sustainable, nor do they necessarily make them more efficient. However, there is strong evidence that they 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 on-line 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.

