

Occasional Paper 1

Ethics in the Provision and Use of IT for Business

BY PENNY DUQUENOY WITH NICOLE DANDO AND IAN HARRIS

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Ethics in the Provision and Use of IT for Business

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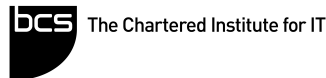
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Foreword

by Ian Harris, Vice-Chair of BCS, The Chartered Institute for IT's Ethics Strategic Panel

Why should business executives concern themselves with IT ethics?

When asked by a journalist “what is most likely to blow a government off course?”, Harold Macmillan is believed to have said “events, dear boy, events”. A 21st century, corporate Macmillan, if asked the equivalent question about business, might well respond, “IT events, dear boy, IT events”.

Many of those IT events that might blow your business off course have a strong ethical dimension. Consider the following tough questions:

- Can IT suppliers win your business through your competitive tendering processes without lying to your business?
- Would a fair number of your customers be angry if they knew what your business does with their personal data?
- Do your staff know the potential impact on their jobs of your impending big new IT system, or have you chosen to keep a little quiet about that side of the project?
- Could your IT project team possibly deliver the big new IT system project on time and on budget without overtime at unhealthy levels and/or that is unpaid?
- Would anyone working on your big new IT system project team have the courage to suggest to you that the project might be going awry?
- If the methods behind your business's differential pricing and/or customer screening systems became public knowledge, might your potential customers and/or the general public be justified in crying foul?

These tough questions have both an information technology element and an ethical element. Few senior business executives would read those questions and conclude that the issues contained in those questions are entirely the domain of their IT people. Indeed, most senior business executives would recognise that the proverbial buck stops with them, and not their IT people, should one or more of those issues blow up.

Of course, the questions can be different for different businesses. In some cases, for example, IT system failure or misuse could potentially lead to serious injury or loss of life. This paper uses the London Ambulance Service system project failure in the 1990s in a couple of examples. That project raised a great many IT ethical issues in addition to the project management issues, with which we do not directly concern ourselves here. The issues echo many of the IT ethical issues that businesses constantly face, even if the risks are not quite as dramatic and/or high profile in your business.

In the 1990s, most businesses learnt that effective IT strategies needed to be embedded within the business strategy. Business executives needed to own those IT strategies as well as the business strategies in order to implement those business strategies successfully.

In the first decade of the 21st century, businesses began to realise that IT governance good practice needed to be embedded within their corporate governance. Business executives needed to be an intrinsic part of the IT governance structures in order to meet their corporate governance commitments.

As we approach the second decade of the 21st century, businesses are starting to recognise that business ethics and IT ethics need to be intrinsically linked. Business executives need to understand the richness of their IT ethics questions and address the business's IT ethical issues as an intrinsic part of their business's commercial ethics.

Coming to grips with the ethical challenges around IT is not just "a good thing to do", it helps the business to create an ethical environment in which bad things are far less likely to happen. IT project failures and reputation-damaging revelations about business's use of IT are bad things, but importantly they almost always stem from significant ethical failures. Had the business environment prevented those ethical failures, the bad things, or negative "IT events", would have been far less likely.

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Chapter 1

IT and Ethical Challenges for Business

Introduction

This paper explores how doing the right thing and achieving outcomes that reflect responsible business practice can pose a challenge when IT is employed to realise a business objective, initiative or project.

Some of these challenges are specific to IT provision and use. While many may be a feature of any business function and practice (treatment of employees, customers and suppliers for example), it is in the unique context of IT provision and use that such business ethics issues are explored here. There are particular reasons (set out later in this chapter) why the use of IT in business poses significant challenges to doing the right thing and to achieving outcomes that reflect responsible business practice. This report aims to:

- **draw the attention of senior business people** to issues, dilemmas and challenges that are common in IT provision and use and which might compromise an organisation's ability to live up to its ethical values and commitments.
- **demystify issues associated with solving business problems using IT**
- **provide guidance** on how to plan, implement and evaluate the use of IT so that ethical challenges are anticipated, and the organisation's ethical values are reinforced, or at least not contravened.

This paper is for anyone who believes that a goal of any business initiative, and the IT projects that support it, is to build relationships of trust as well as to deliver targets on time and on budget.

Such a goal necessitates business practice that is in line with a set of ethical values. It implies a concern to do the right thing, as well as doing things right.

This is not a report about computer ethics or IT ethics as such. IT ethics itself has become an established academic and professional field involving the questions raised generally by the IT revolution and its impact on society¹. Concerns here are limited to challenges posed by the provision and use of IT in business for business. Neither is this paper specifically targeted at IT professionals; its aim is not to be a handbook for the conduct of IT professionals.

The guidance in this paper is intended to assist business managers in any function who are considering using IT for a business objective. As such, the projects and initiatives discussed in this paper are primarily business projects with an IT element, although some are IT focussed projects.

What is ethical business practice?

The field and practice of business ethics is now well established. It is commonplace for large companies and other organisations to employ senior individuals with dedicated teams to ensure that ethical standards and corporate responsibility (CR) commitments are understood and upheld. These commitments will be driven both by a set of ethical and business values determined by the organisation itself, and by relevant legal and regulatory requirements that determine what is acceptable conduct.

¹ Mason, R.O., Mason, F.M. and Culnan M.J. (1995) *Ethics of Information Management*, Sage Publications. Also Kallman, E.A. and Grillo, J.P. (1996), *Ethical Decision Making and Information Technology: An Introduction With Cases*, McGraw-Hill, New York.

It is possible to distinguish two approaches to ethical business practice. One focuses on doing ethical things, such as supporting the community, for example through educational projects and philanthropic programmes, or by introducing an “ethical” brand. The other approach concerns doing all things ethically, i.e. applying ethical standards to all business activities, relationships and decisions across all functions – including those that involve IT. Doing things ethically is always a tougher challenge than doing ethical things.

Business ethics is the application of ethical values, such as integrity, fairness, respect and openness, to business behaviour... [it] is about how an organisation does its business and how individuals carry out their roles. It applies to any and all aspects of business conduct, from boardroom strategies, to sales techniques, accounting practices and how companies treat their suppliers².

The main corporate tools for implementing ethical values are an ethics or CR policy, and a code of ethics (or statement of business principles) which provides guidance to staff (see box 1).

Box 1: Example of business principles - Royal Sun Alliance³

Integrity

We will act with openness, fairness, integrity, and diligence. We will always adhere to the applicable laws, regulations and standards in the places that we do business.

Performance

We will promote a positive and challenging high performance culture. We will do this by encouraging personal accountability and personal development and measuring, rewarding and recognising success.

Responsibility

We will act responsibly as individuals and as a company. This applies to the management of our business, our approach to corporate risk and our interaction with key external stakeholders.

The issues with which business ethics practitioners are occupied, and which pose challenges and dilemmas for all business people, are by no means static. As the expectations and agendas of wider society evolve and as new business practices, new locations, new means of production and ways of working come into place, often as a result of the opportunities afforded by new technologies, so new ethical issues and challenges to what is right and wrong are unearthed. These demand reflection and debate.

Ethical values and IT for business

What is ethical/responsible and what is not? In most large businesses, employees are required to adhere to the company’s own code of ethics which will offer guidance and standards that go beyond the law and which will apply to all business activities. Members of professional bodies or trade associations will usually be required to follow their particular codes of practice. For example, for IT professionals, standards of behaviour are set out by BCS, The Chartered Institute for IT (hereafter BCS)⁴.

² ‘Living up to our values’, Nicole Dando and Walter Raven, IBE 2006. p.12. For more information on business ethics visit: www.ibe.org.uk

³ Extract from Royal Sun Alliance Corporate Responsibility Report 2008 http://www.rsagroup.com/rsa/_uploads/documents/RSACRRreport2009.pdf

⁴ Code of Conduct (www.bcs.org/conduct) and Code of Practice (www.bcs.org/practice)

For any business project, a company's ethics policy needs to be the benchmark, and this includes any project involving IT.

For a new business initiative, new and specific commitments may be needed to help ensure that the company's core values are not compromised and if there are likely to be issues and impacts not already covered by the company's existing code of ethics. Additional values relevant to IT provision and use, and data management can be agreed upon; for example, trust, privacy and confidentiality are vital for effective data protection.

All parties involved in an initiative will need to agree on how the rightness and wrongness of particular actions are to be judged and to whom the project is accountable. They will need to agree what these values mean to all the organisation's stakeholders likely to be affected by the project, and what they mean for the conduct of those involved.

Doing business ethically goes beyond legal compliance. It is assumed that businesses operate in accordance with applicable regulations and laws. Doing business ethically requires people to think about discretionary responsibilities and make sound ethical choices.

*In everything we do, we aim to be commercial and fair, to maintain our integrity and professionalism and to respect the needs of shareholders, staff, suppliers, the local community and the businesses in which we invest.
3i Group plc, Report and Accounts 2007, p.40*

Because almost 'everything we do' is mediated by IT, addressing the issues raised by IT needs to be considered at boardroom level. Integrating core values into IT processes is as important as in all other business processes.

Why does IT raise ethical challenges in business?

Applying information technology for business objectives bears particular characteristics that lend themselves to potential problems with ethical dimensions. These problems are discussed below.

1. IT is complex, the terminology often difficult to understand by anyone other than technical experts, and IT can be costly.

- The provision of the IT system (i.e. the planning, design, specification and procurement) can challenge the skills and practices of the business people involved. Any lack of understanding may be exploited by suppliers. They may misjudge the expertise and knowledge that others have, and as a result, projects might be more costly. Ultimately, it might mean that those who should be responsible are hindered in making sound ethical decisions.
- Where technology hides operational processes, transparency in existing working procedures may be lost, which often results in unintended outcomes for users.
- The technical terminology involved in IT planning and provision poses communication challenges for IT and non-IT staff alike collaborating to achieve a business objective. There can be a disconnect between business leaders and their technical functions. Misunderstandings may lead to unintended consequences, including ethical impacts.

- IT may be considered by business people to be ethically neutral (or amoral⁵) as computers are not moral beings. They may not be familiar with the choices that IT professionals make and the consequences of those choices, for example about issues of accountability regarding how people use the technology or the manipulation of data that becomes possible.

2. IT brings change.

- When new IT systems are being introduced, or changes made to existing systems, there is an opportunity for ethical lapses to arise. Once in place, processes and procedures may be disrupted and familiar contexts of work changed. There may be new pressures to cut corners and take integrity risks. New and unfamiliar ethical dilemmas may arise for which no guidance is available.
- New opportunities to explore and exploit information can lead to poor ethical decision making and behaviour if guidance to employees has not been provided or updated.
- New IT systems, introduced to solve a business problem or realise a business opportunity, can reconfigure organisational structure. They can impact on corporate culture and they can mediate relationships with stakeholders. These changes in the business processes may be viewed as unfair by some.
- The drive for innovation and to be ahead of competitors may lead to the use of untested IT - accompanied by a failure to consider its effects on people, and even on the effectiveness of the business.

3. IT is everywhere, yet often imperceptible.

- The use and reach of IT in business is ubiquitous, thus potentially posing a wide range of problems with an ethical dimension.
- The specific inter-dependencies of systems (technical and organisational) within an organisation can mean that responsibilities are unclear.
- Media reports of delayed projects and escalating costs in IT projects are all too familiar. Against such a background, the perceived levels of risk in providing a new information system can provide an environment for conflicting priorities among suppliers of IT and their customers which may lead to a compromise of ethical standards.
- The users of IT or the receivers of data will most probably be geographically remote from the operator of the system or the sender of the data. This can mean that impacts are perceived as being in cyberspace, where ethical issues might be ignored or seem unreal and not physically manifest.

For these reasons, both the provision and use of IT may have implications for an organisation's continued ability to conduct its business in a way that is in line with the ethical standards it espouses.

⁵ Richard T De George calls this "the myth of amoral Computing and Information Technology", in De George, R. T. (2003): *The Ethics of Information Technology and Business*, Blackwell Publishing, MA USA

In the world of IT and business change, things move so quickly and this speed can sometimes be achieved at the expense of quality. Timescales are set that can never be achieved, changes are planned that are clearly never going to work, and the approach taken to projects is sometimes quite obviously inappropriate or unethical.

Derrick Cameron (2008) Resignation - the last resort of the principled IT professional?, BCS.

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Chapter 2

Issues in Provision and Use

Introduction

In the provision or development of a system, ethical challenges may result from decisions made during planning or arise during negotiations between supplier and business. Then, once the system is in place and in use, yet more challenges may arise. These challenges may affect relationships with any of the business's stakeholders.

Issues concerning both the provision and use of IT are continuously emerging as technology, public expectations and business practices evolve. This chapter therefore describes a sample of those issues rather than attempting a complete account. In this chapter, we firstly examine the issues arising from the provision of IT systems from four stakeholder perspectives: suppliers, customers, staff and society (see Figure 1):

Figure 1 – Stakeholder Perspectives

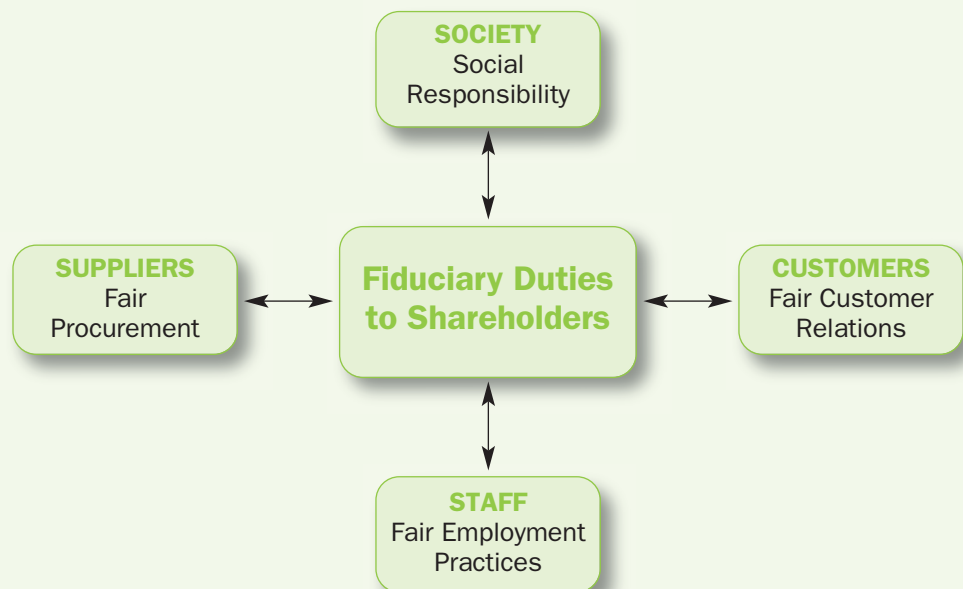


Figure 1 shows that, for each of the four stakeholder perspectives, the ethical considerations need to reflect the business's fiduciary duties towards its shareholders. Those fiduciary duties, set out in the Companies Act 2006, underpin the business's relationships with other stakeholders. Doing business ethically and doing business well should all make for better business, which is ultimately in the interests of the shareholders. The existence and importance of duties towards shareholders is taken as read and not restated throughout the issues raised.

This chapter then looks at the issues arising from the use of IT systems from the perspective of three types of business assets: tangible assets, information assets and intellectual property (see Figure 2):

Figure 2 – Business Asset Perspectives

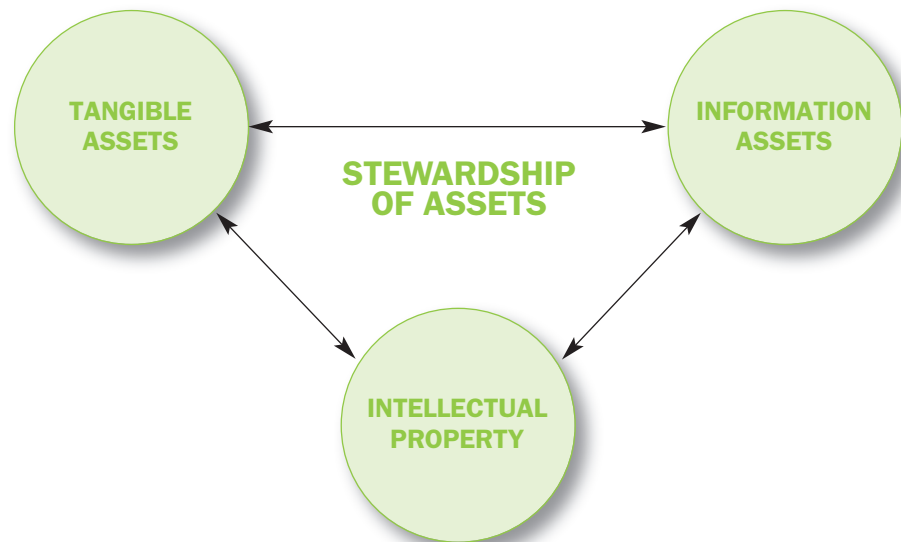


Figure 2 illustrates that, in each of the three business asset perspectives discussed, the ethical considerations cover the duty to undertake sound stewardship of the business's assets.

As with the four stakeholder perspectives used for the ethical issues relating to the use of IT systems, these are helpful groupings used largely for convenience. These perspectives are interrelated and are not mutually exclusive categories. Some issues span more than one perspective and some issues relate to both the provision of IT systems and the use of those systems.

Issues in the provision of IT systems

Fair procurement

Procurement processes, despite good intentions, can often impede rather than enhance good practice. Often the very processes put in place to try to enable fair procurement can detract from that desired outcome. For example, the imperative for transparent processes sometimes results in overly bureaucratic procurement procedures. The buyer is often so focussed on meeting the requirements of the process that a broader and more considered view of available options and opportunities is obscured⁶. Ethical considerations are often absent from or obscured by the lengthy “tick box” procurement process. The constraints of such a process can therefore inadvertently deny fair and equal opportunities for suppliers; i.e. disadvantaging smaller, more innovative suppliers.

Indeed, overly-bureaucratic procurement processes tend to favour existing suppliers who have the experience of navigating (and sometimes avoiding) the worst excesses of the procurement process.

⁶ Harris, I and Mainelli, M, Jones, H (2008) 'Caveat Emptor, Caveat Venditor: Buyers and Sellers Beware The Tender Trap', *Journal of Strategic Change*, Volume 17, Number 1/2, pp. 1-9, John Wiley & Sons.

Even if the procurement process is sound, proportionate and well grounded ethically, there are inherent asymmetries in relationships between buyers and sellers that present ethical challenges. In particular, the relative positions of power and knowledge are highly asymmetric and can change markedly during the relationship.

From the point of view of the buyer of an IT system, there is the opportunity to exploit their power advantage during the negotiation stage. However, if the buyer puts undue pressure on the seller by asking for more than is reasonable or realistic, is the outcome likely to be favourable to either party? Does the buyer have an ethical obligation to attempt to prevent the winning supplier from suffering from ‘winner’s curse’? (i.e. trying to meet almost impossible targets, inadequate rewards and/or potentially working under conditions that put inordinate pressure on members of the “winning” team.)

Box 2: Example: London Ambulance Service (LAS) despatch system⁷

The regulatory framework for procurement offered no further guidance other than to ‘put out to tender’ and advised referring to recommended lists – but no list existed to cover the work that was needed by this project.

The standards stated that the lowest tender should be accepted (unless “*good and sufficient reasons to the contrary*” were given). The lowest tender received the contract.

There was a requirement to complete within a specified timescale. Many of the bidding companies expressed grave concerns that the timeframe was not feasible.

Only companies who accepted the timeframe were shortlisted (no weighting was indicated for suppliers with relevant previous experience).

Management consultants advising the LAS management had reported that in the event of a ‘solution’ not being found, *cost and time estimates should be significantly increased*.

While the seller, of course, has an ethical imperative to tell the truth, buyers in these circumstances should be cognisant of the commercial pressures that sellers face and recognise their own ethical imperatives to ensure that they are not creating an environment that encourages supplier falsehood in the procurement process. Insisting on an unrealistic deadline is a good example of unwittingly creating an environment that encourages falsehood or at least the withholding of material information⁸. In the London Ambulance example above the bidders that were ‘truthful’ in saying the timeframe was not feasible were not shortlisted. Further, decision making under pressure can impact on ethical judgement. Pressure to keep costs down, and/or bring the project to completion within a time constraint, are likely to result in ethical compromise which can adversely affect both the supplier and the customer.

The relative power relationships change considerably once the contract has been awarded, as the cost, effort and timescales involved in changing supplier in mid-provision tends to be prohibitive to the buyer. Thus the supplier often

⁷ Report of The Inquiry Into The London Ambulance Service (February 1993). <http://www.cs.ucl.ac.uk/staff/A.Finkelstein/las/lascase0.9.pdf>

⁸ Carr, A. (1968) ‘Is Business Bluffing Ethical?’, Harvard Business Review, 1968 (reprinted in Donaldson, Thomas & Werhane, Patricia H., *Ethical Issues in Business: A Philosophical Approach*, Pearson Prentice Hall, 2008)

finds itself in the stronger power position having previously been in the weaker position. From the buyer's perspective, if you treat suppliers fairly during the procurement process and orient the contract towards open, transparent, fair and honest practices, then your experience as a customer should consequently be fair. This issue leads us neatly towards the subject of fair customer relations.

Fair customer relations

A fair procurement process is characterised by responsible suppliers as well as buyers. If your business were the supplier, you would need to consider fair customer relations in that context.

One quite common issue that can lead to ethical challenges is variations and extensions to contracts. The customer is often in a weakened power position when requesting variations or extensions, as the supplier often knows that its buyer will be extremely reluctant to change its supplier. Supplier businesses should not seek to abuse their power in such a situation. In the longer term, both parties will tend to be better off if the business relationship is conducted in a commercially and ethically sound, consistent manner.

In retail situations, businesses might not think of themselves as suppliers of IT systems to their customers; but such businesses are often (at least indirectly) just that. Consider the example related to internet-based retailing, set out in Box 3.

Box 3:

(Non) transparency of penalising processes

"In online tests conducted in 2000, Amazon set DVD prices in a customer-specific, selective way as a function of the user's browser type, service provider and frequency of previous visits to the Amazon website. As a result, at a given time the price for a standardised DVD such as the film 'Planet of the Apes' differed by \$10 and more between customers"⁹.

Whether rewarding customer loyalty (repeated purchases reduce prices) or as an incentive to buy at the first visit (the price goes up on subsequent visits), the ethical challenges include the extent to which such processes should be transparent to the customers, as well as consideration of whether an element of deception is taking place.

Another consideration involves launching a new product. For instance, is it unethical to roll out a product early when you know it has bugs in it bearing in mind that achieving perfection in software is an unattainable state? The question then needs to be asked about what levels of 'bugs' are or are not acceptable for an 'ethical' launch. How honest should you be with your customers about this? Is there an ethical obligation to let users know that they are guinea pigs – if that is indeed what they are? Is there an ethical obligation to state the uncertainties surrounding possible product or version life?

A very similar set of issues applies to the deployment of internal systems within a business and the ethical considerations pertaining to staff.

⁹ Rosencrance, L. (2000) 'Amazon charging different prices on some DVDs', in Wiedmann, Buxel and Walsh 'Customer profiling in e-commerce: Methodological aspects and challenges', *Journal Of Database Marketing* Vol. 9, 2, pp. 170–184. Henry Stewart Publications.

Fair employment practices

IT systems are complex, they often change the working environment markedly, and can result in extra pressure on staff at many levels. For instance, those staff involved in providing the IT system and/or those staff who become users of the system.

At what point does it become unethical to expect staff to meet deadlines even when overtime/weekend working must be intruding into work/home balance or to change to more pressured working practices? How do you balance the ethics of overtime and pressure, with the ethics of meeting pre-stated commitments and obligations to deadlines?

Again, is there an ethical obligation to increase the competence of one's staff by giving them opportunities to develop a wider knowledge and experience by not locking them in to specialist systems? If the supplier is a monopoly or quasi-monopoly (e.g. Microsoft), is there an ethical obligation to buy from them because to do otherwise perhaps locks your staff into disadvantageous proprietary knowledge? Conversely, does your company feel an ethical obligation to monopoly-bust deliberately because monopolies are inherently unethical?

Another ethical issue that is relevant to the provision of IT systems in the workplace is the matter of accessibility. This commonly arises where staff with a disability are not able to use new systems and their employment opportunities are consequently limited. A report, sponsored by the Royal Mail, recognised this in its advice to IT Directors (see Box 4).

Box 4:

Recognising diversity and accessibility

...for some time large companies have been aware that there are a sizeable number of customers and employees who have difficulty or discomfort using off-the-peg hardware or software and have been trying to do something about it. Making IT systems flexible enough to be as useable by as many people as possible is at the heart of accessible IT...

...Organisations have been required by law since 1995 to make reasonable adjustments under the Disability Discrimination Act (DDA) to ensure that disabled employees and customers are not disadvantaged...¹⁰

In cases where organisations have a web presence for service provision, or information for customers and the general public, recognising accessibility issues will also be relevant for these groups. For example, the lack of provision of screens in multiple languages in applications where language barriers would have a significant impact on the potential user base for that IT system. Another example is providing options to show text in large fonts, which enables visually impaired people to use a system that they might otherwise be unable to work with.

¹⁰ *The IT Directors' Guide To Accessible IT*, sponsored by the Royal Mail in association with the Information Technologists' Company, edited by John Lamb (2007).

Social responsibility

Difficulties with ethical decision making arise when conflicting priorities challenge the ethical values of a business. This can be in a number of ways - some reaching beyond immediate and obvious stakeholders to society at large. Labour rights and environmental issues are perhaps the most obvious, and at the forefront of public attention. For instance, will your new IT system compromise your business's corporate responsibility or sustainability statements? Can you ethically justify, on environmental grounds, the new IT system you intend to introduce? Will environmental commitments influence your provision decisions?

In many instances, there is a trade-off between the environmental costs involved in disposing of old equipment and the potential environmental savings from providing more energy efficient IT. Similar issues pertaining to the ongoing use of IT are discussed under "*Stewardship of Tangible Assets*" in subsection 3 of this chapter.

Social responsibility considerations also arise with product development. If your business is developing innovative new systems that might benefit society generally, is it ethically legitimate to patent that innovative element? Many arguments have been put forward for open source software (thus combating the monopoly situation mentioned above). Others have questioned the ethical basis of the open source approach, arguing that optimal levels of research and development are rarely feasible using this model. There are no universal right or wrong answers to these ethical issues; the ethical pros and cons in each case need to be weighed up as they arise.

In some instances, social responsibility extends to issues pertaining to national development. If launching a product in the developing world, (e.g. mobile ICT for telephony and banking) is there an ethical imperative to ensure continuity of product and service in such environments where economic development might be closely correlated with the availability of such products and services? Are there circumstances when it is unethical to decommission? Some ethical questions can be pre-empted and should be considered in advance of launch to avoid ethically difficult problems arising later.

Such ethical questions should be considered in advance of launch, to avoid ethically difficult problems arising later which could have been anticipated and possibly pre-empted prior to launch.

Issues arising from the use of IT systems

The information, the technologies that hold that information and the intellectual property within information systems are vital business assets. Business executives have the same duty of care to protect these information assets as given to any other business asset. The issues arising from the use of IT systems are set out in the following categories:

- stewardship of tangible assets;
- stewardship of information;
- stewardship of intellectual property.

Stewardship of tangible assets

In the case of computers and data storage devices, there are significant security concerns. Most businesses now realise that meeting security requirements means removing business information from assets prior to disposal; genuinely secure removal of business information presents some technical challenges which are beyond the scope of this paper. However, from an ethical point of view, the business needs to take due care, and that includes the nature of the information being removed from the assets. For example, if highly sensitive information has been stored on a computer's storage device, the data on that device should be securely removed prior to disposal to prevent any chance of that data subsequently being inadvertently or improperly restored. There is a significant overlap between the secure stewardship of tangible IT assets (as discussed in this paragraph above) and the secure stewardship of information, in particular when business information is stored on portable items such as laptop computers, USB devices and smart phones (see "*Stewardship of Information*" below).

There are also significant environmental concerns regarding the use of IT equipment. The IT sector is believed to be as large a producer of carbon emissions as the aviation sector, when energy use at all levels (data storage in data centres, use of power by the IT equipment in the office, and power consumed by mobile devices) is taken into account¹¹.

Many businesses are boasting of progress in their reduction of energy use (and therefore their carbon footprint), but the ethical business will need to consider whether it has reduced its energy bill at the expense of someone else's? For example, has outsourcing of computing power to data centres been taken into account when calculating a business's carbon footprint?

Disposal of equipment that is no longer needed and disposal of IT consumables such as printer cartridges are issues that provide further environmental challenges and concerns. Environmental claims in corporate responsibility and sustainability statements can often be compromised unless the business has clear and ubiquitously enforced policies for the disposal of IT assets.

Stewardship of information

IT systems are used as part of everyday business practices to store and exchange business-critical information. However, much business information pertains to other stakeholders, such as staff, customers and suppliers. A business would be well advised to remember its duty of care towards those stakeholders when considering these responsibilities.

Data losses

There have been several high-profile media reports of extensive losses of business data (including, in some cases IT equipment) in the last few years. Such incidents reveal the extent to which many organisations, including large corporations and government bodies, fall short of their responsibility to take good care of their information assets.

¹¹ 'Computers and the Environment', *The Economist*, 22 May 2008, http://www.economist.com/opinion/displaystory.cfm?story_id=11412495

The example below of a government security failure illustrates the scale of data losses from one government department (see Box 5). It is interesting to note that this high-profile case led to many organisations, both commercial businesses and government organisations, contacting the Information Commissioner in respect of their own organisation's problems.

Box 5: Losing confidential customer data

In November 2007 two discs containing details of 25 million people were lost in the post.

The discs contained the entire child benefit database and were not security protected (i.e. encrypted to prevent unauthorised access).

The UK Information Commissioner said that software should be in place to stop entire databases being downloaded, adding of the missing discs: *"It was a really shocking example of loss of security"*¹².

Since the losses, a number of organisations have contacted the office of the Information Commissioner regarding problems they had encountered with security in their own organisations.

Security

Further ethical challenges can occur when either technology or information are compromised by lack of security. The potential for attacks on company IT systems to gain information is always present, either from within the company, or from outsiders. The threat is usually well understood by the technical staff and system providers.

For example, what if a known security breach takes place that compromises customer information? Are customers to be informed of the risk? Are suspected cases dealt with appropriately? Does the organisation have a moral duty to inform the police? Unauthorised access to a computer system is after all an illegal act. Customers have a stake in that information and the decisions that the business takes in respect of the breach. The ethical element of the decision needs to take the customers' interests into account as well as those of the business.

The following example of a business security failure led to a fine as well as reputation damage. It is easy to see how the commercial imperative to provide marketing professionals within the organisation with easy access to valuable information can sometimes be at odds with the ethical imperative to be a good steward of such information.

¹² 'More firms admit disc failings', BBC news online, 4 December 2007. http://news.bbc.co.uk/1/hi/uk_politics/7127951.st

Box 6: Substantial fine for inadequate security¹³

The Financial Services Authority (FSA) hit the Nationwide building society with a £980,000 fine following the theft of a laptop containing confidential customer information.

The regulator levied the penalty for “*failing to have effective systems and controls to manage its information security risks*”.

Nationwide, which has about 11 million customers, did not realise the laptop contained customer information and waited three weeks before starting an investigation, the FSA said.

The laptop was stolen from an employee’s home during a burglary in August 2006. The building society believes the thief was after the laptop itself rather than the information on its hard drive.

The data was for marketing purposes and did not contain any PIN numbers, passwords or account balance information, Nationwide said.

Nationwide informed its customers of the problem and no losses were reported, it said. It also commissioned a review of its information security, the FSA said.

Monitoring

Ethical challenges can arise when organisations use IT to monitor customer behaviour and potentially generate customer information without the customers’ knowledge.

As new uses of IT emerge, it is not always easy to see the larger ethical picture, especially when technology gives a company the opportunity to pursue new marketing objectives. Some customers however, may feel their privacy (i.e. the web sites they choose to visit) is compromised, especially when they have not been informed, or given the opportunity to opt out.

Box 7: Customer monitoring

In 2006 BT gave permission to a company (Phorm) to trial tracking technology on its customers (with a view to provide directed advertising to them). 18,000 customers had their web site visits tracked without their knowledge.

*[A]lthough BT has vigorously defended its actions claiming that 'it was not illegal', the question remains as to whether it was prudent, or even moral, to secretly snoop on the browsing habits of their customers*¹⁴.

Phorm, the Aim-listed company which promises to revolutionise internet advertising, faced trouble in defending its reputation. When it emerged in 2008 that BT had conducted two secret trials of Phorm’s controversial software (which tracks browsers’ surfing habits in order to deliver user-specific ads) privacy campaigners hit the roof.

¹³ ‘Nationwide fined nearly £1m for inadequate security’ Computer World UK, 14 February 2007
<http://www.computerworlduk.com/management/security/data-control/news/index.cfm?newsid=1801>

¹⁴ Jude Umeh, The Phorm Factor (BCS Blog) 7 April 2008 available at: <http://www.bcs.org/server.php?show=ConBlogEntry.393>

Box 7:
Continued

Angry activists have set up numerous blogs (including *No to Deep Packet Inspection* (nodpi.org) and *Anti Phorm* (antiphorm.co.uk) to campaign against Phorm and its sinister-sounding Deep Packet Inspection (DPI) technology. Phorm, and BT, scored a serious own goal, by not asking customers' consent before including them in the original trials. What is more customers and campaigners are right to feel aggrieved¹⁵.

Staff can also be vulnerable to monitoring by IT. Research carried out by the Economic and Social Research Council (ESRC)¹⁶ found that 52% of all British employees have their work monitored by computers. For instance, some warehouse workers have been 'electronically tagged' enabling employers to check that they are not taking unauthorised breaks and are completing their work efficiently¹⁷. Whilst this can support company good practice and staff training – particularly in such places as call centres – ESRC's research showed an increase in stress experienced by workers. Although employees who do not realise their work is being monitored may experience less stress, the business's ethical policies on privacy (and the Information Commissioner's guidance on good practice¹⁸) are likely to be contravened by covert surveillance.

Similarly, the monitoring of access to web-sites, emails and use of social media are often standard practice in many organisations. They are undertaken to protect the company from illegal activities that might be conducted by staff (either intentionally or unintentionally). Again, ethical and legal issues arise from such monitoring; for example, are the boundaries of business use, acceptable private use and unacceptable use made clear to staff? Employers are in a position of power over employees. While it is important for employers to ensure that business systems are used primarily for the business, it is also in the business's interests that reasonable-use policies are in place, monitored appropriately and enforced using proportionate means.

Box 8: **Staff monitoring of emails and web use**

The monitoring by a Welsh college of an employee's phone, email, and internet use was a breach of her human rights, the European Court of Human Rights ruled. The UK Government had to pay €3,000 damages and legal costs in the case.

According to the Court of Human Rights ruling¹⁹:

The applicant in the present case had been given no warning that her calls would be liable to monitoring; therefore she had a reasonable expectation as to the privacy of calls made from her work telephone. The same expectation should apply in relation to the applicant's e-mail and internet usage.

¹⁵ 'Phorm's Stoppoulplay site is a PR disaster' The Daily Telegraph, 1 May 2009
http://blogs.telegraph.co.uk/finance/rupertneate/9669467/Phorms_Stopphoulplay_site_is_a_PR_disaster/

¹⁶ 'More than half of UK employees under IT surveillance' Computer Weekly, 9 Jan 2008
<http://www.computerweekly.com/Articles/2008/01/09/228835/more-than-half-of-uk-employees-under-it-surveillance.htm>

¹⁷ 'Firms tag workers to improve efficiency' The Guardian, 7 June, 2005
<http://www.guardian.co.uk/supermarkets/story/0,12784,1500851,00.html>

¹⁸ Information Commissioner's Office Employment Practices Code http://www.ico.gov.uk/upload/documents/library/data_protection/practical_application/quick_guide_to_employment_practices_code.pdf

¹⁹ 'Monitoring of employee breached human rights, says European court' OUT-LAW News, 4 April 2007
<http://www.out-law.com/page-7936>

Stewardship of intellectual property

The boundaries between an individual's and a business's rights can also cause difficulties when it comes to intellectual property. In many cases, it will be clear. Most businesses involved in the development of innovative IT equipment or systems have clear contractual terms to cover employees' rights (or lack thereof) to enjoy the benefits of intellectual property they develop on behalf of the business.

However, consider circumstances where staff are encouraged to exchange ideas using a shared online area (for example, a 'wiki' page). Do those ideas belong to the company, or the individual? If the intellectual property is to be claimed by the business from such informal mechanisms, is that made clear to staff (at the risk of staff not subscribing)?

Similarly, if staff are encouraged to use social networking sites (to promote business aims, and exploit the networking opportunities) are they made aware that the information they put on the site becomes the property of the social network company they use?²⁰

²⁰ For example, see LinkedIn's Terms of Use: http://www.linkedin.com/static?key=user_agreement&trk=fr_useragre

03

Chapter 3

Good Practice

This chapter suggests some pointers towards good practice that will enable an organisation's ethical values to underpin any business initiative that involves the provision and use of IT. It suggests how to ensure high ethical standards and avoid ethical lapses. It covers planning, implementing and evaluating systems.

Planning

- Integrity is the cornerstone of ethical standards. Considering possible integrity risks early in the planning process will often save costly remedial action later.
- At the beginning, align the business case for the initiative with the organisation's code of ethics and ethical guidelines. Most major organisations have an ethical policy which is often stated in terms of 'business principles'.
- Clarify any additional ethical values arising from the initiative. Ensure that goals and values are connected and that they are shared with all parties involved.
- Consulting with stakeholders can highlight potential areas of ethical tension which can then be openly addressed.
- Clear communication is the key to successful, as well as ethical, outcomes. Follow a practice of transparency wherever possible to reduce the risk of misunderstandings and unforeseen pressures to cut ethical corners.
- Exploring inherent ethical dilemmas and seeking guidance wherever possible fosters confidence in the enterprise and the team.
- Put in place procedures for speaking up to support concerned employees. Plan for specific ethical training and awareness relevant to the initiative.
- Set out clearly ownership and responsibility for ethical dimension of each initiative to enable a coherent approach and demonstrate the importance of ethical values at board level.
- Where possible, set out ethical criteria and metrics. Adopt a framework to review and monitor ethical dimensions.
- Be mindful of the nature of the information that will be held on the system; who is to see it, how might it be interpreted, who will be affected by the information being held (See "*Stewardship of Information*" in Chapter 2). Look to company policy on ethical information practices to inform business processes and procedures (see Box 9).

Box 9: Example policy for information practices - Royal Sun Alliance – Security Policies ²¹

“Our information security policies are designed to satisfy three key requirements:

- *Confidentiality - making sure that information is only accessible on a ‘need-to-know’ basis and that access to sensitive data is particularly restricted;*
- *Integrity - making sure that the information is only amended in an authorised way, so that we can trust the reliability of the information; and*
- *Availability - making sure that, although protected, information is available when needed for proper business use.”*

BCS’s Ethics Strategic Panel has devised DIODE (the name reflects five stages: Definitions, Issues, Options, Decisions, Explanations); a meta-methodology which uses flowcharts and checklists to help people assess ethical issues in new technologies. DIODE is described as a meta-methodology, because it provides a framework that enables its users to deploy tools and techniques of their own choosing, while also providing access to helpful tools, techniques and templates (see Box 10).

Box 10: BCS Ethical Framework For Assessing New Technologies - DIODE

The purpose of DIODE is to provide some guidance and leadership on assessing the ethical issues arising from the provision and use of new technologies²². DIODE can be used to address these concerns from two angles:

- the strategic/abstract assessment of a new technology (mostly the concern of government, academics and research scientists, but sometimes the concern of businesses)
- a project/application-specific consideration of potential research, development or deployment using a new technology (more commonly the concern of businesses looking to provide and use information technology).

DIODE addresses fundamental ethical concerns and is comprehensive in its ethical compass, yet it also aims to have an appropriate and manageable scope, enabling, for example, businesses to use it as a practical and workable framework when planning new technology initiatives. The framework’s five stages are:

- Define Questions - ensures that the assessor has defined the technology or project to be examined and framed the ethical questions,
- Issues Analysis - ensures that all relevant parties who might be affected are considered (and where appropriate consulted) and that the relevant risks and rewards are examined from both teleological and deontological perspectives,
- Options Evaluation - ensures that relevant choices are made. This is not merely a go/no go assessment; often the answer will be to go ahead with appropriate safeguards and/or checkpoints along the way,

²¹ Extract from Royal Sun Alliance Corporate Responsibility Report 2007, p.17
http://www.rsagroup.com/rsa/_uploads/documents/RSACRRreportFinal2client2.pdf

²² ‘Helping ICT professionals to assess ethical issues in new and emerging technologies’, BCS Position Paper, 2009,
<http://www.bcs.org/upload/pdf/assessing-ethical-issues.pdf>

Box 10:
Continued

- Decision Determination - ensures that the assessor can clearly state the ethical decisions made and reasoning behind them. It encourages the assessor to revisit minority interests at the stage before making the decision. The decision should include guidance on the circumstances which would lead the assessor to revisit the problem,
- Explanations Dissemination - ensures that the decisions are communicated appropriately, including public domain publication wherever possible.

Each of these stages is supported by a checklist with supporting templates and tools. As DIODE is a meta-methodology, the checklists do not prescribe the use of particular templates and tools, rather they simply ensure that all relevant ethical challenges are considered and dealt with. The framework is iterative; one issues question encourages the user to revisit the earlier questions if necessary, including the definition stage questions. Similarly, the options stage has an iterative question referring the user back to the issues stage questions.

DIODE is currently being piloted, using case studies and real cases. Early stage testing has yielded positive feedback. The aim is for DIODE to provide training and guidance through a practical framework which should help many constituencies, including businesses looking to provide and use new technologies, to assess the ethical challenges at the planning stage.

Implementing

A business initiative involving IT can raise a number of ethical issues that, if not addressed, can at best compromise the project and at worst cause the endeavour to be abandoned. The cost to the business in terms of time lost and unfulfilled business strategies, as well as the financial costs, can be significant. The following suggestions can be used to guide implementations.

- Avoid potential supplier bias in the specification of requirements - in specifying too rigid constraints (e.g. "*lowest price tender must win*") wider opportunities may be missed and undermine ethical considerations. In any case, such a narrow view may well not be the best one from a commercial perspective.
- Ensure inclusiveness and avoid bias in tender listings (both long-listing and short-listing processes can have unintended biases).
- Check the ethical values and commitments of prospective suppliers / joint venture partners to ensure a mutual match.
- Recognise the particular power relationships evident in IT, arising for example from expert knowledge, specific terminology of the supplier, buying power and target constraints.
- Identify the ethical risks within these relationships as part of the supplier contract, or joint venture agreement. This is likely to encourage a more open, and transparent way of working.
- Recognise and address possible work/home balance issues arising due to inflexible cost or time constraints.

- Clarify ethical dispute resolution processes during implementation.
- Consider any ethical dimensions of decommissioning prior to commissioning.

Evaluating

The extent to which ethical commitments have been adhered to needs to be evaluated. This would normally include an assessment of ethical concerns that have arisen, where difficulties have been addressed, and where further work and considerations might be needed.

- *Monitoring the ethical outcomes* and reviewing the ethical dimensions of initiatives as they progress could and should be incorporated within company practices and ethical codes.
- *Reviewing the ethical dimensions* of enhancements or refreshments to an initiative is also advisable, given the changing nature of an information system's development. What was ethically satisfactory at one time, and in one context, may have a different aspect in another. Changes to a technology can change the ethical aspects of the system which may not be evident to all the people involved in providing that system nor the people using it.
- *Likewise, any developments in the company's ethics policy* need to be applied to the initiative. Conversely, ethical learning from each initiative should inform your business's ethics policy so that it evolves and improves, and ethical learning from each initiative is incorporated into other live initiatives as soon as possible.

Box 11:

Short checklist of practical steps for any stage of the initiative

Consider using focussed workshops, prototyping and walk-throughs, involving representation of all parties to be affected.

- Undertake ethical risk analysis, with input from across the spectrum of those potentially affected, and subject to ongoing review.
- Establish communications facilities to enable feedback and concerns to be tabled, and identify clear responsibility to respond to every issue raised.
- Develop training programmes and implementation plans in consultation with all involved.
- Sign off every “*project milestone*” by all involved, ensuring that there is a review at every stage of the original objectives, ethical risks and perceived benefits.
- Establish and address the impact on staff affected by the initiative, anticipating inevitable resistance to change.
- Overall, communicate, communicate, communicate and not just from the project team outwards but across all relevant stakeholder groups.

Considering the ethical dimensions of IT provision should be an integral part of a business's existing ethics policy. It brings benefits to the initiative, staff, customers, other stakeholders and ultimately the business as a whole. Recognising the ethical challenges allows the business to provide guidance to staff and other stakeholders. Similarly, it is vital to evaluate the outcomes of the provision and use of IT according to the ethics policy.

Appendix 1

Issues in the news 2008 - 2009

Facebook violates Canadian privacy laws

16th July 2009 FT

Facebook has “*serious privacy gaps*” and must make changes to comply with Canadian laws, according to a report issued by the country’s privacy commissioner on Thursday. This is the first time a government has found Facebook in direct violation of its laws, and comes as the world’s largest social network with 250m users, is pushing its users to share more of their information with everyone on the web. “*Facebook has to be more transparent about telling people what they do with their personal information, how long they keep it, and who is able to use it,*” said commissioner Jennifer Stoddart. There are 12m Facebook users in Canada, more than a third of the country’s 33.6m citizens.

www.ft.com/cms/s/0/08c09c54-723a-11de-ba94-00144feabdc0.html

UK mobile phone firms to sell data about customer activity

16th February 2009 Guardian

The UK’s mobile phone networks are to start selling data about the internet sites visited by their customers to advertisers. The companies have been collecting the information over the past year and will use it in an attempt to generate more advertising. News that the industry has been monitoring what users do on the mobile web is likely to infuriate privacy campaigners.

www.guardian.co.uk/business/2009/feb/16/mobile-phone-internet-advertising

Blogs that spin a web of deception

11th February 2009 FT

Techniques involving the unsavoury marketing practice of generating fake grassroots enthusiasm for a product, known as ‘astroturfing’, ‘flogging’ and ‘comment spamming’, are on the increase as companies try to harness the popularity of social media. But now, in an effort to regulate how employees behave on the web, firms and industry groups are developing their own online codes of ethics. Coca-Cola, for example, has established its own set of social media guidelines and distributed them in a memo to all employees. The policy emphasises the need for transparency and encourages employees to use common sense when discussing the brand online.

www.ft.com/cms/s/0/d321c9b6-f85d-11dd-aae8-000077b07658.html

Companies dominate data-failings shame list

29th October 2008 FT

Companies top a league of shame published on Wednesday by the privacy watchdog as part of efforts to crack down on data security problems in both the private and public sectors. The figures are published amid intensifying pressure on executives in industries such as financial services and communications as data watchdogs broaden their assault on bad practices highlighted by Revenue & Customs’ loss last year of data relating to 25 million people.

www.ft.com/cms/s/0/aae4860a-a529-11dd-b4f5-000077b07658.html

Abbey fined £30,000 for silent calls

21st March 2008 The Independent

Abbey, the UK bank owned by Spain's Santander, is being fined £30,000 by the telecoms watchdog for causing distress to its customers with silent marketing calls. The problem occurs when an automatic dialling system rings a large number of people simultaneously, and too many pick up for them all to be connected to an agent. The phenomenon can be upsetting, particularly for older people, and Ofcom can fine offending companies up to £50,000 if more than 3 per cent of a marketing campaign is made up of silent calls within any 24-hour period. Abbey's penalty is for exceeding that limit on 73.7 per cent of the days between October 2006 and April 2007.

www.independent.co.uk/news/business/news/abbey-fined-16330000-for-silent-calls-799046.html

Managers admit they would exploit private data

23rd June 2008 FT

Some marketing managers are prepared to give out key private customer data such as sexual orientation, political affiliation and credit card details to third parties in an attempt to increase sales, warns a survey today. The US-based Ponemon Institute, a privacy research group, also found that almost two-thirds of the marketing professionals it surveyed admitted consumer information had been lost or been stolen over the past two years. The research - which was commissioned by StrongMail Systems, an e-mail security company - comes after the privacy watchdog warned of receiving an alarming number of reports of data security breaches in the private sector.

www.ft.com/cms/s/0/d124b0e8-40ba-11dd-bd48-0000779fd2ac.html

UK deal to fight film and music net piracy

24th July 2008 FT

A groundbreaking deal between broadband companies and the music and film industries to tackle illegal downloading, in which thousands of people will be sent warning letters, will be announced on Thursday. Ministers will call the move the internet industry's last chance to avoid statutory regulation or levies. It will back up this threat by publishing proposals to force internet service providers to take responsibility for their users' actions and pledging to enact them next year if the voluntary measures are ineffective.

www.ft.com/cms/s/0/f929aa9e-5901-11dd-a093-000077b07658.html

Online junk-food ads 'targeting children'

16th July 2008 The Independent

Children are continuing to be targeted by junk food companies advertising their products over the internet or through "viral" promotions, despite a ban in January this year on television adverts promoting unhealthy food to the under-16s. Companies that manufacture products high in salt, fat and sugar are still using tried and tested tactics to promote less healthy foods to children whilst simultaneously exploring "backdoor" advertising routes to circumnavigate the regulators, according to a report by the consumer group Which?. But campaigners are concerned that companies have become increasingly savvy at finding ways to target children through other means.

www.independent.co.uk/life-style/health-and-wellbeing/health-news/online-junkfood-ads-targeting-children-868705.html

Emails reveal Starbucks spied on staff looking to establish union

11th January 2008 The Independent

Starbucks managers monitored internet chatrooms and eavesdropped on party conversations in a covert campaign to identify employees agitating for union representation at the coffee chain, internal emails reveal. The correspondence has come to light after a long-running battle between the company and a union angry at being prevented from organising among Starbucks' 150,000-strong army of "baristas" and other employees.

<http://news.independent.co.uk/business/news/article3328444.ece>

Appendix 2

Examples of commitments concerning IT in codes of business ethics

IBE research on codes of ethics (sometimes called Codes of Conduct, Business Principles etc.) shows that most address IT issues only in terms of security, data protection and appropriate use. Examples are below. There is little guidance for employees or explicit commitments regarding the impact on stakeholders, such as employees, customers and suppliers, of the provision and use of IT by the business itself. This could reflect the presumption that all business activity should comply with the business's generic ethical principles. However, where particular issues are likely to arise in an area of business activity, i.e. where integrity risks are high, it would be good practice to provide targeted commitments and guidance.

BG Plc - Principles into Practice 2009

Protection and use of information

Whatever your role is, you work with information that belongs to BG Group and you must make sure it is secure. Information Security is the method of ensuring:

- Confidentiality – information that is private stays private. If in doubt, never disclose information without authorisation.
- Integrity – information is correct and up to date.
- Availability – information is available at all times to those authorised to use it. This guidance explains how to keep information secure when, for example, using the phone or electronic devices, sending faxes, disposing of materials, or simply leaving your desk unattended.

Source: www.bgggroup.com/CorporateResponsibility/PrinciplesintoPractice/Documents/BG_Principles_Into_Practice.pdf

Alliance Boots - Code of Conduct and Business Ethics 2008

Privacy & monitoring of group facilities

Alliance Boots complies with the privacy and data protection standards applicable to employees' respective countries of employment. Employees' usage of Alliance Boots telephones, e-mail and internet facilities will be subject to monitoring in compliance with lawful best practice and evidence of abuse will result in disciplinary action, including dismissal. For example, Alliance Boots may monitor employee use for legitimate business purposes, to prevent suspected illegal conduct or other misuse or to ensure that customers and other business contacts are being properly responded to. Alliance Boots cannot guarantee the confidentiality of employees' usage of Alliance Boots systems. E-mail and voice mail messages and internet usage are potentially subject to interception and to disclosure to third parties in the course of litigation or an investigation.

Source: www.allianceboots.com/App_Portals/AllianceBoots/Media/Corporate%20Governance/Item%209f%20Code%20of%20Conduct.pdf

Cadbury's - Our Business Principles 2008**Appropriate use of company resources**

Company assets are intended to help colleagues achieve business goals.

We expect colleagues to use our resources in a responsible and ethical manner. While incidental or occasional personal use may be allowed with prior approval from a manager, misuse is not acceptable. This includes misuse of such things as company credit cards, IT/internet, telephone and time at work.

Source: www.cadbury.com/SiteCollectionDocuments/English%20Booklet.pdf

Deloitte - Code of Ethics 2008**Communications Systems**

All personnel are encouraged to use the Internet and e-mail in order to make communications more effective and efficient. However, the main purpose of these communications systems is to facilitate business objectives. All personnel have a responsibility to maintain and enhance our public image and to use all communications systems in a productive manner. The integrity of these communications systems also requires that all personnel secure their personal access information in order to prevent unauthorized access to such systems.

Source: www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/coeDeloitteConsultingLLP2008_06v2.pdf

CRH - Code of Business Conduct 2007**Information Technology**

The efficient operation and security of computer equipment is essential for the smooth running of our companies. Special attention should be paid to back up arrangements, anti-virus defences, access codes and up-to-date system support.

These information systems are business tools provided by the Company to assist in the conduct of its business, and use of such information systems should be for legitimate business purposes in accordance with individual company policy. The systems should never be used in any way that would be unlawful, offensive, disruptive or harmful to other people; for example, creating, accessing, displaying, storing or transmitting sexually-explicit images or messages, or material that could be racially or ethically offensive, or any other conduct that violates company policies prohibiting discrimination and/or harassment are strictly prohibited.

We purchase software from external suppliers which is usually subject to copyright and remains the property of the originator. No illegally copied or purchased software can be used as this could expose both the individual and the Company to legal action.

Source: production.investis.com/crhcorp/about/employeescode/english_code.pdf

Invesco - Code of Conduct 2007**Electronic Communications**

In accordance with Invesco's Electronic Communications policies, all Covered Persons are required to use information technology for proper business purposes and in a manner that does not compromise the confidentiality of sensitive or proprietary information. All communications with the public, clients, prospects and fellow employees must be conducted with dignity, integrity, and competence and in an ethical and professional manner.

Source: www.invesco.com/about/code.of.conduct.pdf

Appendix 3

Further resources

- Airos, M. (2009) Ethics and Responsibility in ICT-Enterprises - Prospects and Challenges for Management and Leadership. *Electronic Journal of Business Ethics and Organization studies*, Vol.14, No.1. (2009) pp.33-42.
- De George, R. *The Ethics of Information Technology and Business*, Blackwell Publishing, MA USA, 2003.
- Trevino, L. and Nelson, K (2007) *Managing Business Ethics*, Wiley. New Jersey.
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- Mason, R, Mason, F, Culnan M. (1995) *Ethics of Information Management*, Sage Publications, Inc.
- Webley, S (2003) *Developing a Code Of Business Ethics*, IBE, London
- Janusz Wielki (2007) "*The social and ethical aspects connected with e-space development*" *Journal of Information, Communication & Ethics in Society*, Vol. 5 No. 4. pp. 321-333, Emerald Group Publishing Limited.

Online resources

- Articles, cases and materials on a variety of technology and ethics topics can be found at: "*Technology Ethics*":
www.scu.edu/ethics/practicing/focusareas/technology/
- Duquenoy, P. (2007) *Ethics in the environment of the Information Society*
<http://portal.unesco.org/ci/en/files/25453/11909027561Duquenoy-Penny.pdf/Duquenoy-Penny.pdf>



The Institute Of Business Ethics

The IBE was established in 1986 to encourage high standards of business behaviour based on ethical values.

Our vision To lead the dissemination of knowledge and good practice in business ethics.

What we do **We raise public awareness of the importance of doing business ethically, and collaborate with other UK and international organisations with interests and expertise in business ethics.**

We help organisations to strengthen their ethics culture and encourage high standards of business behaviour based on ethical values. We assist in the development, implementation and embedding of effective and relevant ethics and corporate responsibility policies and programmes. We help organisations to provide guidance to staff and build relationships of trust with their principal stakeholders.

We achieve this by:

- Offering practical and confidential advice on ethical issues, policy, implementation, support systems and codes of ethics
- Delivering training in business ethics for board members, staff and employees
- Undertaking research and surveys into good practice and ethical business conduct
- Publishing practical reports to help identify solutions to business dilemmas
- Providing a neutral forum for debating current issues and meetings to facilitate the sharing of good practice
- Supporting business education in the delivery of business ethics in the curriculum
- Offering the media and others informed opinion on current issues and good practice. Please contact us if you would like assistance.

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Ethics in the Provision and Use of IT for Business

This paper draws attention to the issues, dilemmas and challenges that are common when IT is used to achieve business initiatives.

It provides guidance for all business managers on planning, implementing and evaluating the provision and use of IT so that ethical challenges are anticipated, and the organisation's ethical values and commitments are not compromised.

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