Making the connection: the effectiveness of Internet training in small businesses

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Introduction

Amongst the main business imperatives to enhance and maintain competitiveness, two currently hold widespread currency: the need to train and the need to go “online”. Numerous national and European government initiatives have emphasised both (see Cabinet Office, 1999, Box 4.1). Similarly, private organisations have been extolling the virtues of e-commerce as a means to success. A major recent target market of this “concert” has been the SME, which has often been regarded as relatively slow in its take-up of the Internet.

Historically, the promotion and effectiveness of government training initiatives with SMEs has had a mixed success (Matlay, 1999). Yet, given the emphasis on the need to adopt Internet based technologies by governments and business suppliers, the whole scenario provides an interesting new test case for the way in which SMEs respond to exhortations and incentives to train.

The UK economy has witnessed a rash of Internet based initiatives for the SME. This is predicated on the notion that the Internet is fundamentally changing the way business operates. One recent Cabinet Office report stated:

E-commerce is of increasing importance to the UK economy. It enables revolutionary change in two ways: “process” e-commerce managing the vital flows of information within industry supply chains and “transaction” e-commerce, selling products and services within industry (and Government) or to consumers[1].

Both the UK government and the European Union have emphasised the need for SMEs to adopt Internet based technologies. At the UK level, the appointment of a new minister for e-commerce, together with the brief for small firms, is the latest in a series of activities to promote the Internet. For SMEs, the Government White Paper (Department of Trade and Industry, 1998) in particular promoted the SME uptake of e-commerce.

The current European Commission DG XXIII has taken a lead in fostering new developments and has focused on accelerating the deployment of new technologies to small and medium sized businesses (Botterman et al., 1996, p. 149). A main theme of the G7 Information Society Initiative is the global marketplace for SMEs (European Commission, 1999). The aim is for all G7
countries (now G8) to host Internet sites enabling SMEs to access information, build contacts and eventually engage in e-commerce. Those of national governments such as the UK Information Network complement European initiatives for SMEs (Department of Trade and Industry, 1999).

**Aims**

This paper aims to provide an analysis of the introduction of Internet based skills into small firms through an EU ADAPT training initiative. Specifically, the paper addresses:

- the expectations and experiences of business owners;
- the perceived outcomes of the training;
- the perspective of the trainers and project management team; and
- the effect of the project on the business centres, which acted as hosts for the mobile training facility.

Overall, the paper seeks to contribute to the wider debate on the content and style of training most suited for those running and working in SMEs as well as providing a balanced assessment of the contribution new technologies can make to business performance.

**The ADAPT Community Initiative**

The data on which this paper is drawn are part of an evaluation of an EU ADAPT project delivered in North London. The ADAPT Community Initiative, launched in 1994, was designed to prevent growing unemployment throughout Europe; in the light of improving economic performance and reduced unemployment, the emphasis has shifted towards small firms and beneficiaries in employment rather than the unemployed. According to an interim evaluation of the ADAPT Initiative in the UK:

... the majority of resources are targeted on beneficiaries who are employees in small and medium-sized enterprises (SMEs) ... and... preference is accorded beneficiary companies with fewer than 50 employees (Fraser and Naden, 1997, p. 6).

Appropriate companies and eligible beneficiaries are selected according to various targeting criteria. Targeting criteria include people facing redundancy in SMEs, or unemployed due to restructuring, in addition to the creation of new posts.

The project on which this paper is based is managed by a partnership of public and commercial organisations each with specific responsibility for different elements of the project. These included a local authority and private IT training and consultancy firms. There are several objectives to the project:

- establishing Internet training cafés in commercially managed business centres;
- training business centre staff to use and manage these facilities;
- training SME owners and staff in the business applications of the Internet;
- providing systematic beneficiary follow-up and assessment; and
- disseminating good practice.

The inclusion of the Federation of British Business Centres (FBBC) as a key stakeholder resolved two of the main problems faced by previous ADAPT projects and by SME training initiatives. Some of the main failings of early ADAPT projects revolved around their inability to target suitable companies and thus the recruitment of eligible beneficiaries. An interim evaluation of ADAPT uncovered a low level of accurate targeting coupled with a lack of training needs analyses in beneficiary companies. Consequently the level of dead weight in the projects was high (Fraser and Naden, 1997, p. 51). The use of intermediaries with a foothold in the SME community was recommended as a strategy for improving the take-up by eligible companies. The FBBC was selected by this project to fulfil this role.

As research findings suggest, delivery of small firm training poses a dichotomy between in-house training which facilitates bespoke learning at the workplace, and external training at specialised training facilities, free from distractions, where economies of scale in provision can be achieved (Curran et al., 1996). This training project provides a half-way house and therefore an interesting contribution to this debate. Six business centres hosted a mobile Internet training cafe for a period of three to six months. Two business centres shared one facility. The Internet training cafe consisted of seven workstations, one server and an
integrated service digital network (ISDN) Internet connection.

**Small firms and the Internet**

Research shows that adoption of information and communications technology (ICTs) varies according to size of firm, exporting activity, awareness of benefits, sector, types of customers and its imposition by large trading partners (Iacovou et al., 1995; Lauder and Westall, 1997; NatWest/SBRT, 1998; Poon and Swatman, 1999). Often a multiplicity of interrelated factors may be at work, although size of firm is considered a major determining factor (Department of Trade and Industry, 1998). Although there is a substantial literature in this field, the reasons behind the adoption or otherwise of ICTs within SMEs are less clear. Surveys of small firms have shown a great diversity in utilisation of ICTs according to business sector.

Studies on business applications of ICTs used by small firms have looked at the incidence of electronic communications, information searches, and use of Web sites for marketing. Communications was found to be the most important use of the Internet (Fuller and Jenkins, 1995; Poon and Swatman, 1999; Senn, 1996). Searching for information on the Internet is cited as the next most useful activity, though early studies found little demand given the inconsistency of the medium and need for significant navigation skills (Holtz, 1995; Fuller and Jenkins, 1995). In a later study respondents described the potential of the Internet for new business opportunities and information gathering. (Poon and Swatman, 1999). Few small firms which use the Internet consider it an important marketing tool or direct selling mechanism despite predictions that for “entrepreneurial” small firms the “online economy” presents opportunities to reach niche markets (Angelides, 1997, p. 418). A recent study in the USA reported that only 19 per cent of small firms using the Internet accepted payments online while only 28 per cent had implemented online ordering (Zalud, 1999). A study of small firms in Northern Ireland, with their own Web sites, concluded that the Internet was being under-utilised (Webb and Sayer, 1998). The researchers found that 83 per cent of respondents did not have an Internet strategy or include the Web as part of their marketing strategy. Designing, updating and maintaining Web sites proved difficult for small firms.

Despite the above, the pressure on the SMEs to adopt the Internet has been immense, both from the government and commercial organisations. One of the main strategies recommended to help small firms overcome some of the barriers to ICT adoption is awareness raising initiatives (Iacovou et al., 1995). Another is the provision of suitable training (Chen and Williams, 1993; Pollard and Hague, 1998; Fuller, 1996; Lymer et al., 1998). Consulting services to help transfer business models to the Web has also been identified as one of the key strategies that will encourage small firms to go online (Charlton et al., 1997; Fuller and Jenkins, 1995; Zalud, 1999). In efforts to generate demand from new markets Microsoft, Yahoo, IBM and Netscape all now offer e-commerce and online marketing services to small firms (Kavanagh, 1999).

**Training and SMEs**

Training of the labour force is regarded as a key component of Government competitiveness policy (Department of Trade and Industry, 1998) and is reflected in initiatives such as Investors in People. National targets for education and training in 2000 include an aim for 60 per cent of the workforce to attain NVQs at level 3, or equivalent (Fraser and Naden, 1997, p. 18). Such initiatives are put into context when contrasted with the actual training practices of small firms. One study found that small firms often have difficulty finding training to suit their needs (Matlay, 1999). According to a national study most owner managers undertake only limited external training and few expect to gain formal qualifications (Curran et al., 1996). Less than 7 per cent of a sample of 751 had obtained formal qualifications during the previous year. Informal on-the-job training was also favoured over external training for employees. Training tends to be ad hoc and responsive to immediate and identifiable business needs. The main barrier to external training was the perception that it was both inconvenient and unnecessary.
These conclusions are supported by the findings of another national survey (Sims and Golden, 1998). Only a small proportion of the workforce in the study was undertaking NVQs ranging between 2.5 per cent to 9.4 per cent of the working population. The main reasons given for not using NVQs were the perceived added time and cost and the lack of relevance and credibility of the qualifications. A review of NVQs within ADAPT projects confirm these findings (ECOTEC, 1999). There are few studies, however, on specific Internet training projects for SMEs (for exceptions, see Fuller and Jenkins, 1995; Charlton et al., 1997).

**Methodology and project context**

The research design is based around a responsive evaluation approach, which takes into account the perspectives of several different stakeholders (Guba and Lincoln, 1989). This approach can be contrasted with goal based evaluation which measures a project according to a set of predefined goals. In responsive evaluation stakeholders are interviewed including the main clients, namely the business owners, staff from any organisations implementing the changes, and any other interest groups, both from within and without the organisation, likely to be affected. This is supplemented by direct observation of the change process as it occurs. The aim of the interviews is to elicit the needs and fears of respondents. An analysis of the compatibility of the objectives and concerns of different stakeholders enables the researchers to conceptualise the issues and problems, which the evaluation needs to address.

The first stage of the study comprised an evaluation of the processes involved in introducing an Internet training café to five Business Centres: F; A; P; B; and C. The next stage assessed the impact of the project on businesses and business centres and the potential for self-sustaining cafés independent of the project. Data were collected through a variety of methods and included tape-recorded face-to face and telephone interviews, and direct observation.

A model describing two alternative approaches to the introduction of new technology was used to map the implementation process of the mobile Internet training café in business centres (Blackler and Brown, 1986). The first approach, the task and technology model, focuses on technology and the role of the IT experts and senior management at the expense of the end-users. A more people oriented approach is described by the organisation as an end-user model, which stresses the involvement of a diverse range of interest groups from all parts of the organisation.

The five business centres were all located in central or north west London in the three London Boroughs of Islington, Camden and Brent. The services provided by centres F, A, P, and B are similar and include reception services and informal advice and support. The number of resident businesses ranges from 27 to 70. Centre C is also an accredited Business Link provider. Services provided for residents include:

- free accountancy;
- legal advice;
- training; and
- a support package administered by a personal business adviser.

**Sample profile of respondent businesses**

In addition to business centre staff and management a sample of 90 training beneficiaries, business owners and employees from 72 different firms were interviewed both prior to and after attending training. Of these, 35 were owner managers and 55 were employees. Businesses in the sample were typical of those found in the surrounding local economic community and were predominantly from the service sectors. A majority of firms employed less than ten people and over half were less than five years old. A number of sub-sectors was represented including the IT industry, business services, the media industry, fashion design and architects and engineers.

Computer use amongst the target businesses varied from basic word-processing and accounts in small catering and craft businesses to sector specific use of industry software by graphic designers, architects and engineers. Unsurprisingly the greatest users of technology were businesses in the IT sector itself. Just over one-third of the firms reported using the Internet and e-mail though how frequently this is used in day to day business was not always obvious. Most IT firms used ICTs as an integral part of day to day
operations. Firms supplying goods and services to business markets were also more likely to use e-mail than those supplying goods and services to consumers.

**Expectations of business owners and staff**

Expectations of the project varied among participants and can be divided into two main categories according to employment status. There was often a distinction between expectations of owner managers, managers and key employees; and those of employees. Employees with no management responsibilities, and who were being sent on the course by employers, saw the project as an obligation, albeit often useful and welcome. These participants viewed the course and the award as a useful addition to their CVs.

For employees with management responsibilities and those from very small firms with only one or two key employees, the value of the course was viewed in a more strategic way as eventually contributing to the service offered to customers. There were also a number of respondents who felt an obligation to find out about ICTs but were very unclear about how they would be able to apply them to their businesses. Several participants had never used the Internet or e-mail before and expressed a desire to conquer their fears about technology and learn about business applications. Many of those who already had the Internet wanted to design their own Web page, while others wanted to learn about searching for information and suppliers.

Only half the respondents were aware that follow-up training was available, though not many knew what it would entail. Most beneficiaries expressed interest in the idea of follow-up, either for reinforcement or for qualifications. Some owner managers felt that follow-up in the form of one-to-one consultancy would be more appropriate than training towards an accredited award.

The prospect of a permanent Internet training café generated interest both from businesses in the business centres and in the local areas. The main interest came from small firms with little IT expertise. Owner managers and employees from these firms anticipated using an Internet training café to access the Internet and for e-mail. Other firms that already had sufficient IT skills in-house reported a need for basic Internet training for new employees and more advanced training for existing employees, as and when new technologies were developed.

**Planning and installation phase**

The project began in December 1997, at Centre F. Delays in funding, however, meant that planning stages were curtailed. A further significant delay was caused by the failure of suppliers to deliver equipment promptly and technical difficulties with the installation of an ISDN line. These delays put considerable pressure on the IT specialists responsible for the installation and delivery of training. Funding arrangements, which required the Internet training café to be operational before the end of 1997, thus imposing a very tight deadline, compounded this pressure. Combined, these created problems in the early stages of the project. This mirrors the experience of other ADAPT projects (Fraser and Naden, 1997, p. 2).

A key stakeholder in the design of the project was the business centre management. Consultation about the project took place primarily with one of the two directors of Centre F. There was no direct liaison therefore between project partners and reception staff about their roles in the Internet training café. This led to a lack of discussion with staff about the impact of the project on Centre F and the enlargement of their work roles to include supervision of the café. This led to confusion among staff about the purpose of the café and their roles in the project. Confusion and anxiety led to resistance.

In the first business centre to host a training café, therefore, the project followed a “task and technology approach”, to change as described in the Blackler and Brown (1986) model, by focusing on senior management and technology at the expense of end-users. The first evaluation study highlighted these shortcomings by using responsive evaluation methods, which elicited a range of perspectives from different stakeholders. Project partners responded by developing several strategies designed to overcome these difficulties.

In the next business centre, Centre A, planning began much earlier to enable these strategies to be implemented. Project partners were also proactive in consulting directly with all staff. Reception staff were therefore fully
briefed and also met with staff at Centre F who discussed their experiences. The success of these measures was evident in the confidence of staff about the arrival of the Internet training café. In subsequent centres consultation strategies were constantly modified to build on new experiences. By the final two installations in Centre B and Centre C a fully people-centred approach was being used. By now staff received both informal familiarisation and formal training, often on a one-to-one basis, prior to the opening of the Internet training café. This approach had the effect of engendering commitment in staff and developing a sense of ownership in the café.

The take-up of Internet training by SMEs

The operational phase can be described through an analysis of the three levels of ICT needs in small firms, namely, awareness raising, training and consultancy. This analysis shows that the project successfully targeted ICT needs at the first and second levels; however, it was unable to address issues about consultancy and advice clustered at the third level.

An initial three-day training course was offered to local and resident business owners and their staff. This was delivered in groups of up to eight over three days based within the Internet training café facility. The course covered Internet technology, such as the latest audio and visual equipment, business applications including e-mail and general search techniques, and basic Web design skills. It was intended to inspire and raise awareness about the potential of the Internet for business rather than to teach the mechanics of business applications. The course content constantly evolved to keep pace with rapidly changing technology and business environments over the two-year period.

Follow-up involved training and assessment in a specially designed BTEC award[2]. Training was delivered in-house. The award comprised two to three units including a mandatory unit “control and use of electronic communications”. This is supplemented by units from the “customer service” NVQ such as “communicating with customers”. An initial target of 100 per cent NVQ attainment was stated in the bid application making a total of 400 beneficiaries. This was an ambitious target given the evidence of low NVQ take-up particularly by small firms (Curran et al., 1996; Sims and Golden, 1998; ECOTEC, 1999). During the course of the project the project partners set a revised target of 25 per cent.

A strength of the award is that it met a number of the recommendations suggested by an evaluation of the use of NVQs by ADAPT projects (ECOTEC, 1999). The study found there was a mismatch between available training and the needs of SMEs (ECOTEC, 1999, p. 4). Training was found to be inflexible in several respects including training materials, timing and location. A main reason for low take-up of training was the perception that it was irrelevant and not tailored to small firm needs. The report concluded that ADAPT projects have had to constantly modify NVQ mechanisms to attract small firms.

“The business use of the Internet” award developed by the project was specifically tailored to meet business needs as well as those of individual trainees. The flexibility of the award meant that beneficiaries were able to select units suited to their needs and which fitted in with work constraints. The result was that some people chose to complete only part of the award. Overall the take-up of the award exceeded national levels. Over one in four of the initial beneficiaries have attained NVQ certification.

As there was no screening of applicants, however, the training was open to all who expressed an interest. The emphasis of the project was on volume of participants, to maximise awareness raising, rather than on selection. This recruitment dilemma was a recurring topic among project partners. It is likely that targeted selection of beneficiaries could have resulted in a greater proportion that completed the award.

Many owner managers would have preferred one-to-one consultancy rather than training towards an accredited award. A general review of technology skills and needs was prompted in firms through their involvement with the project. The need for help at a consultancy level, however, was not met by the project. Instead firms were sign-posted to various external sources of help. This represents a missed opportunity given the goodwill that had been built up with participating firms. The success of IT graduate placements in small firms in a similar project on Merseyside demonstrates a
low-cost solution which could have provided firms with longer term help (Charlton et al., 1997).

The impact of the project on participating businesses

Only one-third of the businesses in the sample already had Internet access prior to the project, though few used it regularly. After the project a further third acquired an Internet connection. These respondents reported being inspired, prompted and encouraged, by the training, to go online. In this way, as well as instilling confidence and imparting skills to small businesses, the project also acted as a catalyst for the acquisition of communications technology. The pattern of ICT use among the sample is consistent with that found by other research surveys (Department of Trade and Industry, 1998). There was greater use of e-mail by firms supplying to other business markets than by firms operating in consumer markets (Foley and Sutton, 1998). Sector, and the presence of a crucial critical mass of trading partners online, emerged as an important factor convincing owner managers to become connected. Knowledge-based sectors such as business services were among the greatest users of ICTs (Fitchew and Blackburn, 1998). Firms involved in exporting or importing were also more likely to be using e-mail and the Internet as an information resource (NatWest/SBRT, 1998).

None of the businesses had yet migrated fully to e-business operations by, for instance, accepting payments online and using online ordering. This confirms findings of recent research, which stressed the fundamental changes required for e-business to become established (Zalud, 1999). Firms in the IT sector were most likely to have some kind of brochureware on the WWW and to liaise with enquirers about product details via e-mail.

There was some evidence to suggest that other sectors might be approaching a critical mass of users, most notably “tourism” and the media industry. There is currently little available research on the response from small firms in these sectors toward the challenges of the information society. In the media industry ICTs and the continuing improvement of audio visual equipment has resulted in the potential for inter-firm co-operation and joint projects which cross geographical, temporal and cultural divides. In tourism the potential for electronic marketing, and booking systems has provided the stimulus behind a project by Centre C to assist a group of hotels to migrate some of their operations online.

Cost savings, for instance on overseas postage, was another commonly reported impact on business operations, along with a reduction of costly international telephone calls to trading partners. Training also prompted consideration of future technology needs by some. Several respondents anticipated future use of Web sites and video conferencing. Some owner managers expressed a desire to integrate the use of the Internet more fully into daily business operations. Thus, the project created an on-going need for IT consultancy and business planning along with a series of ad hoc training needs.

The impact of the project on business centres

The general level of IT skills among business centre staff received a boost from the training. Thus the project met one of the objectives of business centre management. For some staff it was their first introduction to computer technology. For all it created a desire for further training and helped break down the barriers towards technology. Furthermore some staff are currently training for coaching awards enabling the continuous learning of Internet skills in each centre.

Self-sustaining Internet training cafés, however, have not materialised. After both Centre F and Centre A failed to establish their own cafés the project donated a stand-alone PC with Internet access to each centre to act as a stimulus. The study revealed that though staff might be using the PCs they were not being used by resident businesses.

Business centre staff in all locations reported a lack of demand for the facility. Four main factors can explain the failure of the project to establish self-sustaining Internet training cafés in business centres. One explanation concerns marketing, one centres around business needs and the third stems from the rapid pace of change in the Internet market. The final factor is funding.
Business centre management recognised a need for a comprehensive campaign to market an Internet training café. They felt, however, that they did not have adequate resources and that their staff lacked the technical expertise to offer a professional service. Given that their own experience with the Internet was recent and limited they lacked the confidence to sell it to residents. More guidance from project partners on how to market an Internet training café would have been welcomed along with case studies of good practices from businesses.

Many businesses that originally expressed interest in an Internet training café have since stressed the need for privacy and the convenience of in-house Internet access. The findings of this study indicate that many businesses have acquired their own connections in preference to communal access. Owners of some small firms that lack the financial resources to sustain their own access said they would use an Internet training café run by the business centre. Other firms would use an Internet training café to meet ongoing training needs such as induction for new employees and upgrading of IT skills as new technologies emerge.

Technical reliability is also perceived to be an important basic requirement. Though stand-alone PCs are available in centres, these have been dogged by technical problems. Though often minor the impression created is one of unreliability. Business centre staff have relied on project partners to resolve many of these difficulties as they felt they lacked the technical understanding to liaise with suppliers directly. Therefore business centres often experienced periods where their facility was out of commission. The unreliability of the system is a factor influencing the low key marketing approach. According to centre managers the credibility of the business centre is at stake and they are wary of promoting an unreliable service to residents.

A major factor inhibiting the establishment of permanent Internet training cafés is the competitiveness of the Internet provision market. Free Internet access is widely available from computer suppliers to supermarkets. Competition has increased by the launch of small firm services by the giants of the IT industry (Kavanagh, 1999). A business centre that must charge for Internet access is therefore unable to compete. Nor are business centres equipped to offer the kind of consultancy and advice about electronic communications that small firms clearly want. Business centres also lack the technical support to provide this kind of service.

Finally, apart from the loan of a stand-alone PC business centres would have had to finance Internet training cafés themselves. As Internet training cafés have insufficient income generation potential it is untenable that business centres would be able to afford to run them without financial assistance.

Conclusions and policy implications

Overall, this Internet training project has been successful in two respects: raising awareness of ICT use and training. By raising small firm awareness of the Internet the project acted as a catalyst which convinced many owner managers to acquire their own Internet connection. Training could have had greater success if firms had been selected using IT and training audits as recommended by ADAPT. The project was a success in terms of the number of beneficiaries receiving Internet training but, as in other instances, the weaknesses of the NVQ-based approach were exposed. Training beneficiaries were resistant to spending time extending the basic introductory training into a qualification. Thus, even under these favourable circumstances with free training near the place of work on a topic, which has received considerable publicity, NVQ based training proved unpopular. Our results would therefore concur with others (Curran et al., 1996; ECOTEC, 1999). However, whilst we would agree with the argument that schemes with an NVQ element should be flexible, sensitive to cost and to SME concerns about ICTs, it is difficult to resolve the tension between meeting large NVQ target numbers and achieving quality. The “Business Use of the Internet” award itself, though more successful than others targeted at small firms, still has a limited potential. It has more perceived relevance for employees than for owner managers. Arguably the coaching award, currently targeted at business centres, could be adapted for use by small firms. This would enable firms to provide continuous informal on-the-job training, which is a proven preferred training method.

The recruitment dilemma, surrounding volume versus selection, raises a wider issue
about the evaluation of ADAPT projects and other publicly funded training initiatives. Project holders are required to provide quantifiable goals when submitting their bids. This requirement sets the agenda for goal based evaluation methods. By predefining outcomes, however, goal based evaluation ignores the unpredictability of change. Problems such as the recruitment dilemma would not arise if alternative evaluation methods were used. Goal-based evaluation forces project partners to focus on meeting quotas at the expense of offering more appropriate services.

This study demonstrates the strength of taking into account a diversity of perspectives and goals that evolved to meet changing circumstances as the project progressed. Responsive evaluation was also able to expose weaknesses enabling project partners to resolve and adapt to difficulties. The ADAPT initiative would benefit by adopting more holistic evaluation which acknowledges the contribution of a diversity of stake holders rather than the simplistic goal based methods currently in use. This would give a more realistic assessment of project outcomes and enable projects to develop free from the artificial constraints of goal based evaluation.

Despite the failure of permanent Internet training facilities in business centres there is demand from two distinct markets. A need for Internet access exists in small firms with low resources and for newly established firms. The Internet training cafés need to be equipped with business advisers qualified to offer both business planning advice and IT consultancy. The second market consists of larger and more established firms whose continuous training needs include Internet induction for new employees and IT skills upgrading for existing employees. Some of these needs could be met by the provision of training in the coaching award.

Only business centres like Centre C which offer a full business consultancy service and training to developing firms are in a position to meet these demands for permanent Internet training cafés. This argues for a follow-up project, which uses a selection procedure to target appropriate business centres. Project funding could then be allocated for setting up and staffing Internet training cafés and for marketing them.

Finally, the findings of this study present a case for a series of complementary but discrete projects focusing on distinct ICT needs in small firms. Projects should target either awareness raising, training, and consultancy in small firms, or the establishment of Internet training cafés in business centres rather than try, as this project did, to be all things to all people. The project resources were stretched among too many target markets with sometimes conflicting demands. Nevertheless, the project acted as an important stimulus for many small firms and has provided valuable information for future similar projects.

Notes
1 It is estimated that UK e-commerce transactions in 1999 were £2.8 billion.
2 Details of the award can be found at TCAT.com

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