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# Agrinet – taking technology to the countryside

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## ABSTRACT

*For many years, the literature concerning agricultural knowledge transfer has emphasised the importance of using processes designed around the needs of the target population, rather than those of the providers. This paper reports on the AgriNet project in South West England, whose essential feature was the use of minibuses converted into mobile computer facilities. This enabled the project team to take training in the use of information and communication technology (ICT) to even the most remote rural areas in the region, parking in farmyards, pub carparks, and at village halls. Working closely with various community groups, especially Young Farmers Clubs, the project acquired another 80 laptops and created a 'cascading' process in parallel with its use of the buses – individuals would be trained to train others, and provided with a loaned laptop to make it possible. This paper reflects on a project which achieved more than double its targets, and raises questions about the use of project-type funding to meet endemic problems.*

## INTRODUCTION

The development of the affordable personal computer (PC), together with that of the internet, has arguably more potential for the improvement of farm management than any other innovation since the introduction of agricultural education.

Whether one agrees with that statement or not, it is impossible to escape the fact that access to information and communication technology (ICT) confers significant advantage on a business, providing it has the systems and the skills to use it effectively. And there's the rub: even if a rural business can overcome the technological limitations of its position (for instance poor telecommunications infrastructure, including lack of broadband

provision), it may well find that the necessary confidence and skill to use ICT is difficult locations for training courses to colleges and schools, which may involve significant travelling time (by private transport, as public transport is very poor), and which may be inhibiting, especially for those with low educational attainment. Use of ICT in the British agricultural industry lags behind other sectors (Warren 2000), and the problem is particularly marked in the remoter, more pastoral areas of the country, raising the spectre of an intra-rural 'digital divide' (Warren 2002).

**THE AGRINET BUSES**

It against this background that the AgriNet project was conceived. AgriNet ran from late 1996 to the middle of 2000. Its aim was to establish internet IT training for farmers, growers, rural landbased industries and associated industries, based on the principles that:

1. For maximum takeup and effect, the training and equipment would have to go to the learners, rather than *vice versa;*
2. Workshops would have to be flexible, i.e. delivered anywhere, any time, any day of the week (except Christmas day) to suit the clients;
3. Training materials and internet workshops would have to be precisely relevant to the business needs of farmers, growers, and landbased industries. (Fraser 2001)

The project was funded with help of a European Social Fund grant under the Objective 5b scheme, and match funding from a variety of public-sector partners. A secondhand 15-seater minibus was hired from Cornwall County Council (CCC), and adapted to create a mobile workshop with six high-specification laptop computers, connected via a hub through a mobile internet unit. The latter allowed individual and simultaneous connection to the internet via a standard telephone point (provided by the host). The bus was used as a peripatetic facility, driving to village halls, farmyards, and pub carparks to supply basic computer training to local people. Eight laptop computers were also acquired for use independently of the bus: these allowed two simultaneous extra workshops to be run, each with a maximum of three participants.

Organisation of the bus relied on a small team, with the aim of being flexible and responsive. Two people provided project management on a part-time basis, and another drove the bus and dealt with minor technical matters, as well as acting as a trainer. Other trainers were recruited on a free-lance, on-demand basis as the project grew. Workshops were mostly run in evenings, to suit the needs of those in employment or running businesses.

The computer training provided by AgriNet deliberately eschewed the conventional process of starting with word processing, and then working up through spreadsheets and databases to, eventually, internet. The aim was to stimulate motivation by developing competence in an area which would provide rapid results and achievement without hours of drudgery. Thus the entry point was the use of a computer to access online services: email (even if only between the trainees on the same bus) and attachments; use of world-wide web (WWW) in acquiring information; and search engines. If they had access to suitable computers at home or at work, trainees were also given guidance on setting them up for access to the internet.

Having 'hooked' the trainees through the internet, AgriNet could then attend to their other training needs on an individual basis, relying on a flexible, user-driven approach, despite cramped conditions on the buses which made it physically difficult for trainers to reach each workstation.

In early 1998 the project was awarded a capital grant from the Department for Education and Enterprise (DfEE) Skills Challenge Capital Fund. Thus allowed the purchase of a second used bus from CCC, with a service contract to ensure that it would be well looked-after, as well as another eighty laptop computers. A second operator, with IT teaching experience, was trained as a driver/instructor.

## PARTNERSHIP WITH THE YOUNG FARMERS

At this time, the project was refocussed around a stronger partnership with the county Federations of Young Farmers Clubs (YFC). Despite their title, the YFCs cater for people up to 26 years of age, and their members are not drawn solely from the farming community. Moreover, the project was designed to use the YFC to draw others – parents, friends, neighbours – into the AgriNet orbit. The bus would still visit locations on demand from groups other than the YFC, but this new arrangement gave the opportunity for a more focussed and purposive approach.

The AgriNet team went to see virtually every YFC in the Objective 5b area: around 65 in all. Each club nominated two or more members to act as trainers (approximately one trainer per ten members – some clubs could have 50 to 60 members). These were themselves trained (both as computer users and as trainers) on the AgriNet buses: when they were certified as achieving the appropriate competence, their club was equipped with two or three laptops on loan, with software set up through the internet company Farming OnLine (FOL), a partner in the project. It was found to be best to supply fewer laptops than the number of trainers in a club, thus creating a certain tension and pressure to make use of the computers.

On acquiring its complement of trainers and computers, each club nominated people to be trained (both members and non-members) and agreed to complete that training within a given timeframe, with ongoing support from AgriNet. Progress was monitored by AgriNet on the basis of trainer-completed tick sheets and trainee-completed self-evaluations. When the targets had been met, the loan computers were withdrawn into the pool, and the club was given a single laptop, with software and peripherals, for use by the club secretary and treasurer on club business. The donation of the laptop was set up as a significant local event, with clubs supplied with press release templates and other help to ensure good publicity for the club, and also heightened awareness of AgriNet and its services. As well as the laptop for the club, each person trained received a certificate.

From 1998 to the end of the AgriNet 1 project in 2000, approximately 80% of AgriNet's trainees (2,036) were catered for by the YFC 'cascading' process. The remainder were direct clients of the two buses. The latter were particularly effective for catering for local clusters of trainees – for instance owners and employees of a single business; members of a discussion or trading group; a Womens' Institute (WI) party; or members of a large family unit. The buses were also very effective in providing a visible manifestation of the AgriNet project, helping create public awareness through attending local fairs and shows. Setup with a bus would be between 20 and 30 minutes, and dismantling no longer than 20 minutes, allowing maximum possible time for contact with trainees, and extracting maximum marginal benefit from the fixed costs represented by the bus and equipment. It was not unusual for workshops to run to midnight. As well as the full-time trainer-drivers, four outreach coordinators were appointed (two for each of Devon and Cornwall). These would help monitor and support activity, and maintain contact with clubs, but at times of particularly high demand would also be drawn into the training activity. Followup of trainees was limited, although comprehensive referral was provided to local IT centres and colleges.

**FUNDING**

Total funding of AgriNet 1, including in-kind contributions, was around £400,000 (€650,000). Residual value included 80 new laptop computers donated to YFCs, and one equipped bus (say around £100,000 in all). After accounting for this, the funding amounts to a little less than £120 per certificated trainee (many of whom attended multiple workshops). Funding of AgriNet 1 ceased in the middle of 2000, as the Objective 5b structural fund scheme came to an end. With no financial reserves to bridge the funding gap until the next structural fund scheme was implemented, the project donated those few laptops which had not been awarded to YFCs to a training scheme for disabled people, together with the bus that was owned by the project. The original bus was returned to its owners, CCC.

**EVALUATION PROCESS**

The evaluation was based on analysis of a sample (144) of the questionnaires completed by each trainee at the end of a workshop (REF report). The questionnaire was designed

by the project management, and the questions did not always lend themselves to precise analysis. The trainees in the sample were subject to a follow-up telephone survey of the same respondents in December 2000 and January 2001 (between 6 and 36 months after most respondents had last attended a workshop.). 78 (55%) useable responses were obtained. There was no significant relationship between response/non-response and age, gender, size of business, occupation, access to home or work computer, prior use of email or WWW, giving confidence that the respondents could be taken as representative of the whole sample. Chi-square tests were used to check for associations between variables where appropriate: any associations reported are significant at $p<0.05$. What follows is a summary of the results: full results can found in the project report.

## WORKSHOP EVALUATION

### Total throughput

By March 2000, the project had delivered in excess of its declared targets, with more than 190 trainers trained (compared to a target of 100) and over 2,500 certificated beneficiaries (compared to a target of 1200). Half of the latter had attended more than one workshop.

### Trainees

Of the 144 trainees sampled, 40% were female, and median age was 27 years. This gives the sample a very different profile from a typical farming population, where most are male and the average age is high. Table 1 shows the distribution of ages in comparison to that of respondents to a 1998 survey of 2,800 farmers in South West England (Dunster 1998), showing a heavy concentration on younger clients.

**Table 1: Age distribution of sample at time of workshop**

| Age range | Number | % | 1998 survey % (N=1950) |
|---|---|---|---|
| Under 30 | 76 | 53 | 2 |
| 30-39 | 12 | 8 | 15 |
| 40-49 | 35 | 25 | 27 |
| 50-59 | 14 | 10 | 34 |
| 60-69 | 4 | 3 | 21 |
| No reply | 2 | 1 | 1 |
| | 143 | 100 | 100 |

54% were in farming, 5% in horticulture, 4% in farm tourism, 5% in agribusiness and 4% were students (this latter is understated, as some part-time agricultural students will have indicated their primary occupation). The remainder (25%) were from a variety of occupations, mostly unconnected with agriculture.

63% had access to a computer at home, and 67% had access to one at work. Access to a work computer was negatively associated with an occupation in farming or horticulture, but there was no association with age, gender, business size or educational qualification. 42 (29%) had used email previously, of whom 86% had access to a computer either at home or at work: 46 (32%) claimed to have access to internet or had accessed a web site before the workshop.

**Effectiveness of workshop**

Table 2 summarises responses to questions about the quality of the workshop experience, indicating high levels of satisfaction.

**Table 2: Effectiveness of workshop (5=very good, 1=poor)**

| Score | How well did the programme meet your expectations? | How helpful were your tutors? | How clear were the demonstrations? |
|---|---|---|---|
| | % (N=143) | % (N=143) | % (N=143) |
| 5 | 46 | 73 | 62 |
| 4 | 44 | 24 | 31 |
| 3 | 9 | 2 | 6 |
| 2 | 0 | 1 | 0 |
| 1 | 1 | 1 | 1 |

## TELEPHONE SURVEY RESULTS

By the time of the telephone survey, 72% of the respondents were using a computer for business, and 73% for personal use. Only 11% were not using a computer at all. The reasons for the latter were varied, but the ability to manage without a computer, and financial considerations, were prominent. One respondent obtained the benefits of computer use at arm's length, by relying on other members of the family. Five of the nine non-users were contemplating purchase of a computer in the next two years.

### The AgriNet process

Many of the respondents (42%) had come to AgriNet via the Young Farmers' Club, with the remainder through more generally-available sessions in the AgriNet buses. Even after many months, AgriNet training was rated very highly, with 47% rating it as 'very good' and 36% as 'good'. Only one respondent rated it as 'poor'.

Those who had experienced some prior computer instruction were asked how the AgriNet training differed from that previous training.

**Table 3: Differences from other forms of ICT training**

| How did AgriNet differ from previous training? | % respondents with previous computer training (n=51) |
|---|---|
| Based on internet | 37 |
| Individual, one-to-one | 24 |
| Small group | 12 |
| Fun, friendly, relaxed | 12 |
| Agricultural | 6 |
| Convenient | 6 |
| Easy to understand | 4 |

About half the respondents had attended one workshop only, and most of the rest had attended two or three. 5% had more than six (one as many as 20). Although the records were not conclusive on this, it is likely that most of these were in fact designated trainers, and thus attended most of their workshops as providers rather than consumers.

Respondents (except for the one who rated the experience as 'poor') were asked what made the experience so effective for them:

**Table 4: Effective features of the AgriNet process**

| Effective features of AgriNet | % respondents (n=77) |
|---|---|
| Internet instruction, setting up and using email | 35 |
| Individual, one-to-one, small group | 26 |
| Friendly instructors, from community, relaxed, no rush, fun | 16 |
| Convenience: bus, home/local visits, loan of laptop | 8 |
| Good basic introduction to computing | 6 |
| Easy to understand: good literature to read after workshop | 5 |

**Table 5: Improvements which could be made to the process**

| Improvements which could be made | Number of respondents |
|---|---|
| None | 38 |
| Provide follow-up courses, or online support | 10 |
| Keep going to reach others | 3 |
| Make more specific to farming needs | 2 |
| Relate better to individual needs | 2 |
| Improve hardware to reduce offputting problems | 2 |
| Improve computer:trainee ratio | 1 |
| Leave computer with trainees for a time after workshop | 1 |
| More hands-on approach | 1 |
| Make less basic | 1 |
| Reduce pace | 1 |

## DISCUSSION AND CONCLUSIONS

Various issues and themes can be picked out from the above. Firstly, the AgriNet project covered a broad cross-section of the rural community, but not a representative cross-section. Only 59% were directly engaged in production agriculture or horticulture, and a high proportion of these were employees. 40% were female, and over half were under 30 years of age. All but 35% had received some prior instruction relating to computer use, and 71% had access to a computer at home or at work. These characteristics are hardly typical and if judged as a way of reaching out to the land-based industries in particular, the project could be regarded as missing the mark.

Considering other factors – the likelihood that a large proportion of the remainder belong to farm families; the inevitable 'cascading' of the experience from trainees to friends and relatives; and the sheer volume of trainees catered for – this would be a harsh criticism indeed. It does nevertheless beg the question as to how one reaches the sectors of this population which are not well represented: the older age groups, males in production agriculture, and so on. Maybe the answer is that one should not strive too hard in this

direction, but to rely on an osmosis effect from the young in particular to achieve the task in time.

One thing that stands out from the analysis is the enthusiasm of the trainees for the service they were receiving: it was on the spot; mostly met their expectations; was staffed by helpful and friendly tutors; and was based on equipment that they found easy to use. Even one or two years after the event, they were still appreciative, with 83% rating the experience as either 'good' or 'very good'. By comparison with most training activities, particularly those combining computer technology with inexperienced users, this is an excellent outcome. Contributory factors included the way the workshops focussed on the internet, the small-group tuition and a the friendly, relaxed atmosphere, all of which were identified as distinguishing AgriNet from other forms of ICT tuition experienced before or since. Interestingly, the convenience of the workshops, in terms of both space and time, received little comment: either it was not important or, more likely, the respondents just took it for granted.

So the participants enjoyed and valued the experience – but did it change their attitudes and/or behaviour? Workshop participants were asked for their views on the usefulness of the various aspects of ICT to which they had been introduced. They were positive, with scores of at least 3.5 out of 5 in each case (5 being best). More interesting was the indication of a strong upward movement in their views as a result of the workshop, with reference both to business and to leisure use of ICT. Though there are reservations about the real meaning of the 'before' attitudes in particular, this does suggest that the workshop had a positive effect on attitudes.

Changes in behaviour are more difficult to measure. Even if one were comparing questions of identical design over time, there are so many factors that will have operated in the months between workshop and follow-up survey that one can only make a general assessment of direction and degree of movement. In the time between workshop and follow-up survey (one to two years for most), respondents had moved from 71% *having access to* a computer either at home or at work, to 89% *using* a computer for either

business or domestic purposes. 60% of those without access to a work computer were using one for business by the time of the survey, and 70% of those without home computers had converted.

Gains in the use of internet technology were even more pronounced. At the time of the workshop, 29% of the sample had used email previously. Discounting those without access to a computer gives a maximum (undoubtedly overstated) of 25% of the sample able to use email. By the time of the follow-up survey, 69% of the respondents were using email – virtually all them at least once per week, and 38% at least once per day. Virtually all of the users considered the medium to be effective or highly effective as a method of communication. 70% of those with no prior experience of email had used it since the workshop.

Prior to the workshop, 32 % of the sample claimed to have the internet or to have accessed a web-site previously – though again this reduces to 29% maximum able to use the WWW if one excludes those without access to a computer. One to two years later, 63% respondents had used their computer to find information on the WWW since the workshop. Use was less intense than that of email (only 18% at least once per day) and enthusiasm for it as a source of business information more muted (60% rating it as effective or highly effective). This still represents a considerable uptake in a relatively short time, however, even by the current standards of ICT adoption.

## CONCLUSIONS

This project achieved its results by working from the needs of its users, whereas so many such projects are designed around the design of a well-meaning but distant 'expert', and/or are geared primarily to the requirements of the trainers or funders. The combination of buses and laptops allowed the facilities to go to where the people were, allowing them to work in familiar and unthreatening surroundings rather than having to journey to a college classroom or computer centre. Flexibility on the part of the trainers meant that workshops could be run in the evenings and at weekends, allowing many to

participate that would otherwise be prevented by home or business duties. Focussing on the internet, rather than the conventional but laboured progression through word processing, databases, and so on, allowed even the novice user to discover new opportunities, and to achieve a 'quick hit' in his or her first workshop.

Undoubtedly a major contributor to the success of the project was the partnership with the Young Farmers Clubs, which enabled a high level of activity to be generated with minimal expense on advertising. It also ensured good attendance at workshops, ensuring that the facilities would be fully employed. Adding further to the leverage from a small team was the use of a 'cascading' process: training individuals to act themselves as trainers created a substantial multiplier effect. Using a youth organisation tapped into the inherent enthusiasm of the young for new technology, although the range of ages of trainees demonstrates that young people were not the only beneficiaries,

There are lessons for future projects. Though criticism of the project was sparse, there was a call from some for more follow-up courses, and possibly some online support , to avoid participants feeling abandoned once back at base. The reliance on a youth organisation, while having benefits, does limit to some extent the penetration in older age groups, and similar partnerships with other organisations (such as the Womens Institute, and/or specialist groups such as the county Grassland Societies) might help to redress the imbalance.

A more significant flaw arises from the reliance on project-type funding for public-sector extension initiatives. The funding gap at the end of the Objective 5b programme in 2000 effectively killed off AgriNet, and yet no-one could pretend that, despite hugely exceeding its original targets, it had solved the problem it had set out to tackle. No doubt the retort will be that it should have been self-funding by that time, but it is difficult to see how that could have been achieved without seriously compromising the achievement of its mission. This problem is not confined to AgriNet – indeed it is endemic in our current system of governance. Project-type funding is attractive to administrators, but its

side-effects include an encouragement of short-termism, a bitty approach to policy, and much wasted opportunity.

## BIOGRAPHY

Martyn Warren was educated at Newcastle and Reading Universities, and since 1994 has been Head of Land Use and Rural Management at the University of Plymouth, at the Seale-Hayne campus. He is the author of *Financial Management for Farmers and Rural Managers*, in its 4th edition after nearly 20 years in print, and is Editor of *Farm Management*, the journal of the Institute of Agricultural Management.

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