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## IT Connects

**Farmers' experiences  
from the Increasing  
Access to ICT Scheme**





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## Foreword

I am delighted to launch this booklet outlining some of the farmer experiences of Information and Communication Technology (ICT) through the Increasing Access to ICT Scheme. This scheme introduced over 950 farmers to innovative technology solutions and many are reporting real business benefits on their farms.

As we all seek to reduce the burden of paperwork in our industry, effective use of ICT will play an important role. To assist the industry, CAFRE staff will continue to help farmers understand how they can use the latest technology to improve their businesses.

As you read these stories I hope you feel inspired to consider how you can use ICT to make a difference on your farm.

**MICHELLE GILDERNEW MP MLA**  
**Minister of Agriculture and Rural Development**



## How the scheme began

In 2001 the Agri-food industry, along with the Department of Agriculture and Rural Development, produced a report entitled "Vision for the Future of the Agri-food Industry." This report contained many recommendations on how the industry should develop over the next decade. A key theme was the need for the industry to benefit from greater and more effective use of ICT.

In response to this report DARD developed the Increasing Access to ICT Scheme, which has been managed and delivered by the College of Agriculture, Food and Rural Enterprise (CAFRE). The scheme aimed to promote the use of innovative ICT in 800 farm businesses and to share the results across the whole industry. This would be achieved by funding the evaluation of new and innovative technology solutions on farms and in businesses.

The scheme ran from March 2004 until February 2007 and over 950 farm businesses assessed new technologies. These businesses were from all sectors of the industry. This booklet gives an outline of the scheme and shows how six very different farm businesses benefitted from using new ICT.



## How the scheme worked

A total of 988 farmers and growers took part in the Increasing Access to ICT Scheme evaluating 37 different technology solutions.

At the outset CAFRE IT Technologists carried out an evaluation of each new technology. If the technology showed clear potential, then it was placed on a number of farms for assessment, to establish the business benefits in a wide range of situations.

These farmers and growers provided feedback on how the technology was benefiting them and their business.

The types of ICT solutions assessed can be put into 12 broad categories as outlined in the table overleaf, along with the numbers of farmers or growers who assessed the technology in their businesses.





Technology Grouping	Number of Applications
PDA and Spreadsheet	183
PDA and Dairy Management	349
Milk Tank Monitoring	19
PDA and Beef Management	162
PDA and Pig Management	37
PDA and Sheep Flock Management	20
Electronic Identification of Livestock	14
UMPC Internet Access for Poultry	56
GIS and Precision Farming	27
Online Herd Management	51
Online Marketing for horticulture	1
Other	69
<b>Grand Total</b>	<b>988</b>

All sectors of the industry took part in the scheme. There was greater uptake by the more intensive sectors. This was expected as these businesses usually have more information to collect and analyse for management purposes.

### What the terms mean:

#### PC

**Personal computer.** The desktop or laptop computer used in the farm office.

#### PDA

**Personal Digital Assistant.** A PDA is a pocket-sized, hand held computer typically with a 5 cm screen. It is designed to record information while on the move. For over 70% of the participants a PDA was part of their new ICT solution. In some cases it linked with a spreadsheet on the farm PC while in others it integrated with a farm management software package on the office PC or on the milking parlour PC.

#### UMPC

**Ultra Mobile PC.** A light portable computer, about half the size of a laptop, with an integrated screen and a keyboard. This was used to connect to the internet remotely and record and transmit production data in poultry houses.

#### GIS

**Geographic Information System.** GIS is a term used for systems that collect, store, analyse and display information based on specific geographic locations, or map references. In agriculture GIS is the basis for Precision Farming, allowing growers to do yield, soil nutrient or weed mapping and providing data for variable rate application of seeds, fertilizer and sprays.

What follows is an account of the benefits experienced by six farmers who took part in the scheme.

## Cutting out the paperwork

### The farmer

North Antrim dairy farmer, Gavin Graham, was already using herd management software for his production and fertility records. This had helped him to manage his 140 cow herd because of its links with the Animal and Public Health Information System (APHIS) Online records. He was one of the first on the scheme to try a PDA linking with an Internet-based herd management system.

### The technology

Gavin records events on the PDA as they happen on the farm. He inputs heats, services and calvings as well as all his farm quality assurance records. This information is automatically loaded onto the herd management system when he connects the PDA to his computer. In this way he records and analyses all his management information without using pen or paper.



## IT Connects

### The Benefits

Dairy farmers who tried out PDAs on the scheme found several advantages:

- Increased access to information
- Fewer animal identification and data entry errors
- Time saved
- Easier to use than pen and paper

### Talking about the benefits of the technology Gavin says:

*"The main benefit of the PDA is that it saves time. I record information on it once and I can synchronise it with my computer later.*

*It has been of great financial benefit to me. I have been able to improve my calving index because of the information I get for each cow at the touch of a button as I walk through the shed. I would not be without a PDA now.*

*The only down-side is that you need to be really careful how you look after the PDA on the farm as they can't stand any amount of water."*

More recently Gavin has bought software for keeping field records such as fertiliser use, slurry applications and reseeding. This will give him paperless records for cross compliance purposes.

## The electronic marketplace

### The farmer

Nursery grower, Doug Thomson, from Seaforde, Co. Down works in a very competitive business. He operates in a global market, selling his plants to retailers against competition from other growers in many countries. Customers are very discerning and need high quality stock, at the right price, delivered at the right time.

### The technology

Doug already had a website to market his product range but realised that ICT could be used to develop his business further. He created a marketing system based on a digital camera, a new website and broadband along with Adobe and e-mail marketing software. This software, "New Zapp," was funded through the scheme.

Using the software he promotes his nursery stock through electronic brochures which are e-mailed to his customers. The customer can instantly see the quality of product on offer and place an order by return e-mail.



### The Benefits

Business benefits of this technology include:

- Better and more regular communication with customers
- More focused marketing
- More professional brochures
- Ability to monitor customer response

Doug says: ***"The New Zapp programme has been easy to use. The main advantage is the potential to satisfy customer demand quickly. In the summer I aim to produce a new brochure each week compared with a monthly brochure during the winter."***

***The payback period for the system is very short as I have received some large orders from customers who have not bought from me for quite some time."***

For the future Doug intends to continue investing in the e-marketing approach. He has bought a lighting rig to improve the quality of the photos in his electronic brochures.

## Decisions, decisions, decisions

### The farmer

Robert Park, a pig farmer from Ballynure, Co. Antrim has discovered for himself the benefits of having information at hand when he needs it most. He puts a great deal of effort into managing his herd and keeps excellent breeding and finishing records. He uses the information to make sound management decisions.

### The technology

Robert has used a PDA for the past two years to record event data when it happens in his pig unit. The information available on the PDA is later synchronised with the herd management software on his farm PC.

The software gives him a full analysis of the performance of his herd, reporting on individual sow performance, including conception and farrowing rates. Whole herd information is also provided including pre-weaning mortality, number of pigs reared per sow per year and total feed costs.

In business the saying "information is power" holds so true. In this case the information gives Robert the ability to make timely management decisions.



Robert says: ***"The PDA is much better for records than a notebook. I can get the information I need at the right time and make a decision on the spot. For example, when weaning a sow I can check back and find out about her previous performance. If there has been a pattern of poor litter size or other problems she can be marked for culling there and then. It has proven to be a good management tool on the farm."***

### The Benefits

The PDA offers several benefits in the management of a pig business:

- More accurate recording
- Better access to information
- Time saving
- Cost savings
- Better decision-making

## Traceability without paper

### The farmer

Nicola Beavers runs a flock of 250 ewes at her farm near Eglish, Co Tyrone. Before joining the scheme she kept her flock records by reading ear tags and recording information in a notebook. This information then had to be typed into her PC.

### The technology

Nicola was interested in trying out Electronic Identification (EID) in her flock. With EID, each sheep is tagged with an electronic ear tag. The unique numbers on these tags are recognised by a hand-held reader and this information is linked electronically with the management program on the PC. A keyboard on the reader allows information such as weights, drug treatments and body condition to be recorded for each animal.

EID has increased the speed and accuracy of recording compared to pen and paper. Information only has to be recorded once and the system has built-in checks to prevent mistakes being made. Details about the flock are more readily available when out working with the sheep.



### The Benefits

This technology can be used for recording a wide range of information:

- Breeding information and lambing records
- Pedigree records
- Veterinary and drug treatments
- Stock movement and traceability
- Weight recording
- Health schemes
- Nutrient management

Nicola says: ***“At first I used both the EID reader and my notebook. This year I am confident enough to only use the EID reader. It has saved me a lot of time and it is impossible to record the wrong tag number for a sheep.”***

The European Union (EU) has agreed that the 31 December 2009 is the obligatory date for the introduction of electronic identification of sheep and goats in all EU member states. This system shows that farmers can benefit from using electronic identification.

## Links in the chain

### The farmers

Gerard and Claire Collins run a broiler breeding flock on their farm near Lisnaskea, Co. Fermanagh. Part of their daily routine is to keep production records which include the temperature of the house, the consumption of feed and water and the number of eggs laid. This information must be sent each day to Moy Park Ltd to allow them to monitor production. This process involves a lot of time and effort.

### The technology

At first the records were kept with pen and paper and then entered on the Moy Park production database through the company website. To save this double entry, Gerard and Claire tried out a new mobile computer, the Ultra Mobile PC (UMPC). The UMPC is connected to the internet using mobile phone technology. They input records on the web application, through the touch sensitive screen, directly to the Moy Park database as they walk around the poultry houses.



### The Benefits

This technology offers many benefits to poultry farmers:

- They get rapid feedback and can deal with any problems quickly
- The rapid response also improves flock health and welfare
- Much less time is spent on keeping records
- They make fewer mistakes with just the one entry of data
- Better decision-making

Claire says: ***"I can now submit the information to Moy Park, have it analysed and receive reports back in a fraction of the time taken before. This can be done from anywhere in the farmyard. It takes me 40 minutes to record the data for the four houses and I only need to record it once because it goes to the website instantly."***

One thing led to another. After learning to use the UMPC Gerard and Claire went a step further and created a "wireless farmyard." They installed a series of antenna so they could access broadband wirelessly anywhere in the farmyard. This investment cut the cost of sending the data to Moy Park through the mobile phone technology.

## Making the job easier

### The farmer

Accurate up-to-date information is essential in any business and the pedigree Aberdeen Angus beef herd run by David Hall at Rathfriland, Co. Down is no exception. David needs information to manage the breeding performance of his 40 cow pedigree herd, to meet the needs of the Aberdeen Angus Recording Scheme and to satisfy Quality Assurance criteria. He is also a registered organic producer and requires additional records for this purpose.

### The technology

David received a PDA through the scheme and he has used this for all his recording for the past three years. He uses the PDA to record a wide range of data including breeding and production records, veterinary and medicine treatments, feed data, field data and stock movements. David regularly transfers records collected out on the farm to his herd management program on the office computer. Here it is analysed to provide management guidance and can be sent to whichever agency or organisation requires it.



### The Benefits

Beef farmers who tried out PDAs on the scheme found several benefits:

- Easier to use than pen and paper
- Fewer mistakes identifying animals
- More accurate herd records
- Better access to information
- Better decision-making

With the experience of electronic recording behind him David says:

***"I don't know how I could operate my business now by trying to hold information in my head or writing it down on pieces of paper. The PDA has helped me improve my recording tremendously and has worked out well for me.***

***It makes the job easier and saves me some time. For example, it is great to have all the information to hand when a vet is attending a cow. It makes it easier for me and ensures that the business is well run."***

## What next?

The farmers in this booklet represent a small sample of those who have benefited from using technology supplied through this scheme. The experiences of more farmers and growers who are using ICT in their businesses are featured on [www.ruralni.gov.uk](http://www.ruralni.gov.uk) - to access, click on the Information Technology section.

ICT is continually changing and new technology solutions are emerging which will benefit the farming industry. Technologists at CAFRE continue to work along with the industry to assess emerging technologies and provide training for farmers to develop their ICT skills. With CAFRE's Development Advisers, the technology team will ensure that farmers and growers discover how to best use the technology in their businesses. Information will be available through press articles, open days and on the RuralNI web site.

A Farm Modernisation Scheme is being developed as part of the Northern Ireland Rural Development Programme. Through this scheme farmers will be able to get financial help to buy ICT equipment to modernise and improve their business. The scheme will open for applications later in 2008. We hope this booklet has stimulated you to think about how you might use ICT in your business.

If you would like to discuss how you might use ICT in your business, please contact your local Development Adviser or an ICT Technologist. Contact details are provided on the back of this booklet.

