SERVICING NATIONAL RECORDING PROGRAMS

P.A. Rickards
Agricultural Business Research Institute, Armidale, NSW, 2351

SUMMARY
While geneticists in livestock-producing countries may aspire to introduce national breeding programs, the best that is achieved in most cases is national recording schemes which include genetic evaluation services. These have been demonstrated to be quite effective in improving traits of economic importance. Establishing national recording schemes is not without difficulty and requires that the service provider can market the benefits of such schemes to livestock breeding organisations that are in competition with one another. An effective way of doing this is for the service provider to develop strategic and commercial alliances with industry organisations. This also facilitates the technology transfer process which can be industry led. In most industries, the provision of genetic recording services are not in themselves economically viable and thus it is important for the service provider to develop a range of complementary value-added services in order to generate a critical mass of business.

Keywords: National, breeding, recording, genetic, services.

INTRODUCTION
In their enthusiasm to promote their discipline, it would appear that many geneticists believe that countries with significant livestock industries either have or should have national breeding programs. However, there are very few examples of this worldwide and none in Australia. What is more common is that livestock industries strive to have national recording schemes and associated genetic evaluation programs.

Breeders and service providers tend to use the information from the national genetic evaluations to make a range of breeding and marketing decisions. This process has been shown to lead to genetic improvement of national livestock populations for particular traits (many of economic importance) but it would be an exaggeration to call this a “national breeding program”.

WHAT MAKES THEM UNIQUE
Breeding programs in Australia are controlled by individual breeders and breeding organisations which are in competition with one another. For them to collaborate requires that they perceive this to be beneficial to their businesses. In the beef and dairy industries worldwide the most common national part of breeding programs is the genetic evaluation system. The technical advantage of a national system is that the Estimated Breeding Values (EBVs) produced are more accurate and all recorded animals within the country can be compared. The benefits to individuals, which convince them to participate, are varied. Commercial producers benefit because they can compare different sources of seedstock available to them. This gives industry organisations a compelling reason to support national genetic evaluation systems such as the
Australian Dairy Herd Improvement Scheme (ADHIS) and BREEDPLAN. Members of a breed society benefit because their breed can use national EBVs to assist in accelerating genetic progress for particular traits. Individual seedstock breeders benefit because they can market their stock based on an accepted and creditable system of EBVs. National genetic evaluation systems have had to sell these benefits to organisations and individuals to be successful.

There have been many false starts in Australia in developing national recording schemes. For example, the initial brief given to the Agricultural Business Research Institute (ABRI) for development of the National Beef Recording Scheme (NBRS) in 1972 was that the marketing of services should be to individual seedstock producers. In retrospect, this concept was seriously flawed. In particular, it placed NBRS on a collision course with existing breed associations who were also marketing similar services to individual producers. When NBRS changed its modus operandi in 1975 to provide its service primarily to breed associations its success began. In the two decades that followed, ABRI has been able to demonstrate that a centralised development facility at Armidale is able to provide technology on a licence basis more economically than this technology could be developed by individual associations. That is why the associations representing all breeds of beef cattle in Australia support the NBRS.

Experience in the dairy industry has been different. The national genetic evaluation service is provided by the ADHIS has been a resounding success. However, an attempt to establish a national herd recording service (the Australian Dairy Herd Recording Software) failed due to poor management of the software development team and a lack of real commitment of competing herd recording agencies to the concept of using standard software. An unfortunate proliferation of herd recording schemes has resulted from the failure of the ADHRS initiative. Despite this, it has still been feasible to run national genetic evaluations by ADHIS establishing standards which are used by all recording schemes.

Industry research granting organisations can assist in making national recording schemes attractive to use by contributing to the central development of technology. This occurs in the Meat Research Corporation’s (MRC’s) support of BREEDPLAN development at the Animal Genetics and Breeding Unit (AGBU), Dairy Research & Development Corporation’s support of the ADHIS, MRC’s support of LAMBPLAN and so on. An independent evaluation conducted by ACIL International in 1989 showed that the benefit:cost of MRC’s investment in BREEDPLAN was 10:1, which was a high rate of return compared with other on-farm projects evaluated at the same time.

THE TYPES OF SERVICES NATIONAL PROGRAMS NEED TO PROVIDE
At the end of the day, national recording services should aim to be self-financing. This means that their primary focus should be on services which are perceived to be of economic value to end-users and for which end-users are prepared to pay reasonable fees. How this basic principle is applied in commercial services will vary from species to species.
The ABRl approach is to conduct regular market research of both users and non-users of its services to find out the answers to questions such as: which services are well received? which new services should be introduced? do users consider that they are receiving value for money? what changes would be required to persuade non-users to become active participants?

In the past there has been a tendency of many service providers, including ABRl, to allow geneticists and other technocrats to be the principal architects of the services that are provided in national recording schemes. While their views are important, especially in terms of what may be possible with new technologies, ABRl has formed the view that end-users need to be heavily involved in determining the types of services that are to be provided.

Reporting of breeding values for individual traits is important, because it provides breeders with the information they require to plan individual matings (including corrective matings). However, as more traits are recorded and reported on, it becomes increasingly more difficult to condense the vast array of information into "data for decisions". In this situation, it is desirable to provide breeders with a simple dollar index which is able to express breeding values for a number of traits in terms of predicted commercial benefit.

ADDITIONAL INFORMATION & COSTS OF PROVIDING IT
When the recording of new traits is being introduced, there is a valid argument to subsidise both the cost of the research itself and the costs of the recording undertaken by trial participants.

Industry research organisations and service providers themselves often agree to provide economic incentives to encourage early participation. A relevant example is the economic support given by the MRC to the high cost (up to $8 per head) of on-farm scanning of animals as required to produce breeding values for carcase traits.

The author is of the view that, after the relevant development phase, each component of the recording service should meet the test of economic viability.

TECHNOLOGY TRANSFER
ABRI's view is that national recording services should be developed as strategic alliances with industry groups. In this situation, "ownership" of the service lies mainly with industry. Technology transfer is a natural consequence of this type of organisational structure.

Let us build on our previous example of the carcase evaluation service in NBRS. The initial research to develop the genetic evaluation procedures was financed by MRC. On completion of the research, ABRl made the service available to all breeds who wished to use it. The breeds themselves have decided when and how they will introduce the technology to their members.

In the case of ABRI's herd recording services to the dairy industry, ownership of the software is held jointly by dairy industry organisations and ABRl - with ABRl being the minority shareholder. Thus, while ABRI may recommend that certain new technology should be
introduced, it is the industry that makes the commercial decision to proceed, provides the majority of the development costs required and encourages use of the new technology through its regular communications with breeders.

VALUE ADDING/BACK-UP SERVICES
The provision of genetic recording services will not in themselves generate sufficient revenue to support a viable business in most livestock species and in most countries. This simple fact is the main reason that national schemes such as Canadian Beef Improvement, New Zealand’s Animal Plan and Australia’s Woolplan have failed financially.

Australia’s NBRS would also have gone into liquidation in 1975 had it not been for ABRI’s entrepreneurial efforts in introducing a range of services that are complementary to the genetic recording service. These value-adding services include pedigree registers, sale cataloguing, herdbook production, breed secretariat services, herd management software, customised software production, BREDPLAN graphics, data extracts, sire selector software and technical consultancies. ABRI’s revenue from value-added services now exceeds that from its genetic recording services by 600%. It is the success of the value-added services that allows ABRI to continue offering genetic recording services at an affordable price.

The development of value-added services at a national level is also being pursued successfully by ABRI in the dairy, pig, goat, ostrich, deer and alpaca industries. In all industries, ABRI uses the same basic approach as has been outlined here for the beef industry.