

Building Strong Professional Networks

“Ní neart go cur le chéile” (“There is no strength without unity”)

A report for



NUFFIELD IRELAND Farming Scholarships

by Finola Mc Coy

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Executive Summary:

Networking is often considered to be the realm of politicians or socialites. It may be viewed as an insincere or superficial activity, or perceived as a ‘talkshop’. But to fail to recognise the power of networking is to miss out on an invaluable opportunity for personal and business development. Despite the advances in technology and efficiency, human interaction and communication will remain key to the success of these same technologies, whether it is in their development, promotion and application, or their refinement.

Farmers currently engage with many varied service providers (SPs) as part of the management of their business. These agricultural service providers rarely engage with, or even know each other. Yet, they are all working towards a common goal-to provide a good service to farmers to enable them to run an efficient business. In the 300s B.C. Aristotle said “The whole is greater than the sum of its parts”. What if this were to be applied to the agricultural service provision sector? If it worked as a “whole” could it be more effective than the sum of its parts? To achieve this, there is a need to embrace and support interprofessional working, and public and private sector collaboration.

The objectives of this study were:

1. To determine if agricultural service provider networks (SPNs) have a positive role to play in knowledge exchange
2. To identify the barriers to establishing and sustaining SPNs
3. To determine the requirements for initiating and maintaining successful SPNs

Key Findings:

1. Benefits of agricultural SPNs:

As farming systems evolve and business decisions change, so too will the demand for an even broader range of skillsets. Service providers will need to either upskill in new areas, or have connections and work with experts from other fields in order to provide a comprehensive service to their farmers. Knowledge exchange between service providers is an essential part of continual professional development. Developing cross-professional networks can facilitate this, as well as improving the feedback loop from extension to research and development.

The current reality in public agricultural extension services is that available resources are contracting. Fragmentation in the service provision industry means that agri-professionals often work in isolation. Both of these challenges can be addressed through the development of cross-professional networks.

2. Current activity and case studies:

There are examples in Irish agriculture of service providers working together in structured industry programmes, such as the EuroMilk pilot mastitis control programme. There are also organisations that through their work are building networks between organisations and agri-professionals from certain sectors, such as Animal Health Ireland and the Agricultural Science Association (ASA). There are several international examples of programmes and organisations that provide an opportunity for individuals from various disciplines to connect, such as Landbridge UK, NZIPIM and EIP-AGRI. These are just some of the case studies that have been presented in this report, and whose experience and learnings have influenced the recommendations made.

3. Barriers to developing cross-professional networks:

While there are clear benefits from building broader networks in agriculture, to both the service provider and the end-user of their services, it would be idealistic and naive not to recognise that there are also barriers to building these networks. Firstly, making time to partake in networking and upskilling events is a constant challenge for service providers. This can also be more difficult in certain employment situations e.g. self-employment, or when an employer does not support networking because they do not recognise the value of it. Service providers also rarely have an opportunity to meet people from other disciplines in their local area, and when they do it can often be an intimidating situation, particularly for newer graduates. Competition between service providers, both real and perceived, can also be an obstacle to building networks, when people feel they cannot work together for fear of losing business or clients.

4. Requirements to initiate and sustain networks:

Although there are challenges to building networks, the reality is that it can be done effectively. In general, the positive outcomes from networking outweigh the real challenges and the perceived ‘threats’. Networks rarely just start or appear by accident- to build cross-professional networks, it is important to have a driver. This driver, also known as an ‘honest broker’, needs to be respected as an inclusive, neutral body, to act as an intermediary between the various stakeholders, and facilitate their interaction. Nurturing trust, showing relevance, building awareness of the networking opportunities and stakeholder engagement at a management/organisational level are other important building blocks, all of which the ‘broker’ can play a role in.

Recommendations:

1. Avoid duplication and reinventing the wheel! Instead of trying to develop new networks, look at what is currently available and active in Ireland, and develop and enhance that to achieve networking opportunities across all agricultural disciplines.
2. Identify an ‘honest’ broker to act as an intermediary between the various stakeholders, coordinate networks and facilitate engagement and activities. For example, the ASA currently carries out many of these roles, and would be well positioned to establish itself as a recognised broker of cross-professional networks.

3. Nurture collaboration and networking at an organisational/management level. If participating service providers work in an environment where cross-professional networks are supported and encouraged, this will improve ongoing engagement with the network.
4. Identify the needs and demands of potential network participants. The network must have relevance to all-this will be influenced by location, discipline and stage of career of potential network members.
5. Include the skill of interprofessional working in professional training. People don't always automatically know how to work together, or be part of a team. However, this can be managed when SPs understand the different roles that they play, the varying skills that they possess, and how to combine those complementary skills to maximum benefit.
6. Secure funding to support ongoing cross-professional networks. A secure source of funding is an important requirement for effective brokering of a network. However, the 'behind the scenes' role of network brokers conceals their impact and often limits funding support.

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Foreword:

I have a distinct memory of being asked as a teenager by a local veterinary practitioner why I wanted to be a vet. My naïve response was “so that I don’t have to work with people”. His wry smile said it all.....I had a lot to learn! Not only was he one of the earliest influencers in my career, but he was a man ahead of his time. I quickly learned that as a vet in practice, working with people would be one of the most important things that I would do. Another thing that I learned was that it wasn’t that bad! In fact, working with people and exploring how people relate to each other within and between professions has become an area of fascination for me.

Since graduating as a vet, I have been lucky enough to work in many countries and many sectors of agriculture - starting in clinical veterinary practice, followed by a period of time in research and currently working as part of a collaborative industry organisation in Ireland. One thing that has been common to all of those paths, has been the importance of knowledge exchange-it happens regularly between the vet and the farmer, but what about between the vet and the vet, and even more importantly between the vet and other agri-professionals? How can all these areas of knowledge exchange be facilitated and maximised? My experience as a vet in practice was of spending a lot of time working in isolation, with limited opportunity to share experiences and knowledge with my peers, and no visible opportunity to engage with agricultural service providers from other disciplines. In my more recent roles in research and industry, I have had the privilege of creating opportunities for service providers to work together. I have taken great satisfaction from hearing how much they enjoy the experience, and how they feel it is a positive step for them and for their farming clients. Through my work, studies and travels I have learned that while on-farm professional teams might be very effective, to some degree they may also be idealistic. They can be very formal and structured, and not always practical-one size doesn’t necessarily fit all. Thus, should the initial focus be on creating informal networks, that over time and in the right circumstances can grow into on-farm multidisciplinary teams?

Farmers will engage with many varied service providers as part of the management of their business. In turn, these agricultural service providers rarely engage, or even know each other. Yet, we are all working towards a common goal-to provide a good service to farmers to enable them to run an efficient business. When I think about this I am reminded of an Irish saying “Ní neart go cur le chéile”, which translates as “There is no strength without unity”. In the 300s B.C. Aristotle said “The whole is greater than the sum of its parts”. What if we were to apply this to the agricultural service provision sector? If it worked as a “whole” could it be more effective than the sum of its parts? What are the challenges to building this “whole”? What is needed to initiate and sustain it? These are some of the questions that I have sought answers for on my travels.

The initial focus of my travels was Australia, New Zealand and the US, all of whom have either current or past experience of multi-disciplinary knowledge exchange networks. I also discovered countries experiencing significant changes in their agricultural extension services. I also looked at the EU, where there is an increasing focus on multi-disciplinary innovation in agriculture. I visited the Netherlands, where a lot of research has been carried out looking at knowledge networks, agricultural innovation systems and innovation brokers. I discovered through my study and travels that on my own doorstep is an organisation that could provide the foundation for this informal networking that I have been exploring. So instead of reinventing the wheel, maybe we could look at the size of the wheel we have and see if it can be improved to cover more ground?

The irony isn't lost on me - someone who once thought that one of the attractions of her chosen career was 'not dealing with people' has chosen the topic of building networks between people as her Nuffield study topic!

Acknowledgements:

I am immensely grateful to my sponsors, Irish Farmer's Journal and the Irish Farmers' Association for affording me the opportunity to travel and explore this topic. I am also extremely grateful to my employers, Animal Health Ireland, for facilitating me in completing this scholarship, and in doing so recognising not only the opportunity that this scholarship offers me as an individual, but also believing in the value that it will bring to the industry as a whole.

A sincere thank you to all those in various countries that have so generously given their time and shared their experience with me for this study. Thank you to Nuffield Ireland, in particular Bill O' Keefe, John Tyrell and my mentor David Kerr, for their encouragement and motivation, and for always asking the challenging questions! My thanks to my family, friends and fellow scholars who have encouraged and supported me throughout this entire (ad)venture. Finally, my thanks to Dónal for always encouraging me to challenge myself, and the copious cups of tea!

Abbreviations:

ADAS	Agricultural Development Advisory Service
AHI	Animal Health Ireland
AIS	Agricultural innovation system
AKIS	Agricultural Knowledge and Information Systems
ASA	Agricultural Science Association
CAP	Commercial Agricultural Programme
CEO	Chief Executive Officer
CPD	Continuing professional development
DAFM	Department of Agriculture, Food and Marine
DEFRA	Department for Environment, Food and Rural Affairs
EIP AGRI	Agricultural European Innovation Partnership
EU	European Union
GP	General Practitioner
ICT	Information and communications technology
NZIPIM	New Zealand Institute of Primary Industry Management
NZ	New Zealand
SP	Service providers
SPN	Service provider networks
UK	United Kingdom
US	United States

Objectives:

The objectives of this study were:

1. To determine if agricultural service provider networks (SPNs) have a positive role to play in knowledge exchange
2. To identify the barriers to establishing and sustaining SPNs
3. To determine the requirements for initiating and maintaining successful SPNs

Introduction:

Farmers nowadays engage with far more than just one service provider in business management. The decisions they have to make are multiple and diverse, and benefit from the skills of a diverse group of people (Cummins, 2013). If asked, farmers could probably easily identify at least five agricultural service providers that they engage with as part of the decision-making and management of their farm business. Amongst others, these may include farm and co-op advisors, vets, nutritionists, bank managers, agronomists and commercial sales representatives (Fig 1.)

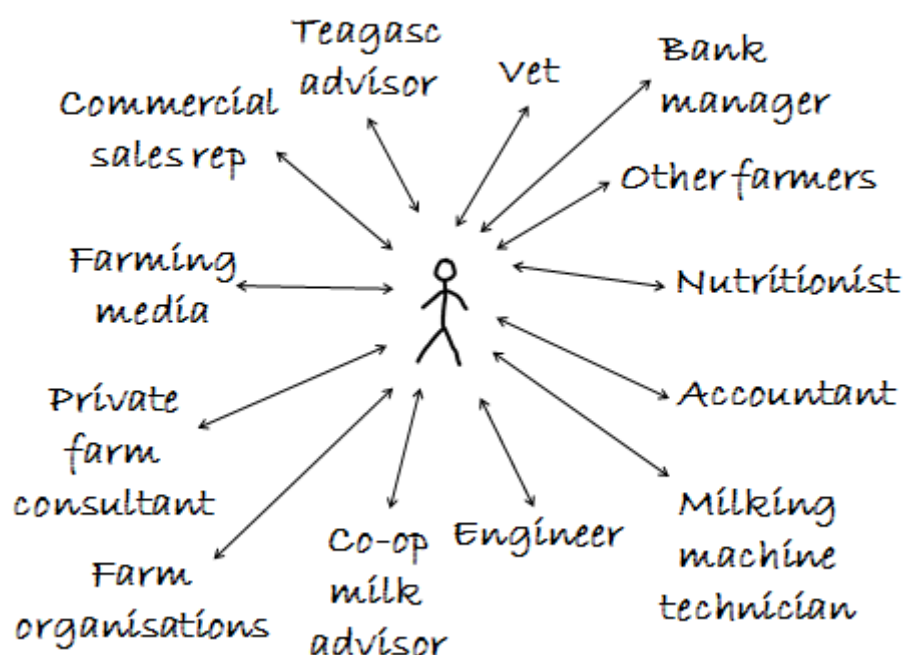


Fig 1. Multiple sources of information and advice for farmers

These service providers (SPs) can all inform farmers, and influence what they do on farm. While they offer differing skillsets and expertise, there are many commonalities between these SPs—they often work in close geographical proximity, they are working with the same

farmers and their ultimate goal is to maximise the efficiency of the farmer and his/her business. At times there can even be some overlap in the areas of expertise and services provided. Yet if these same farmers were asked if their service providers ever worked together, or even knew each other, the answer is unlikely to be ‘yes’.

There are several challenges with a fragmented service provision landscape like this. There can be unnecessary duplication of advice and services, while at the same time there may be important areas of advice or investigation that ‘fall between the cracks’ due to the multiplicity of SPs. Advice given to farmers can often be confusing and appear conflicting, when it is delivered from one perspective only without consideration of other key areas. For example, in a mastitis investigation, the vet may focus on the animals while a milking machine technician will focus on the milking plant, when in reality all of these areas need to be considered, in an holistic fashion. Conflicting advice can also be an issue when those that provide it have little or no communication with other disciplines in the industry. As farming systems evolve and business decisions change, so too will the demand for an even broader range of skillsets. Service providers will need to either upskill in new areas, or have connections and work with experts from other fields in order to provide a comprehensive service to their farmers. Knowledge exchange between service providers is an essential part of continual professional development (CPD). Klerkx and Proctor (2013) explored networks for knowledge exchange in the UK, and discovered that experienced service providers had built up networks of contacts from other professions and drew upon these to access new and different types of knowledge and expertise in situations outside their immediate ‘community of practice’. However, there was no clear pathway or structure for service providers to initiate these networks.

What we did in the past is not necessarily the way that we will work in the future. One thing that can be said is that despite the advances in technology and efficiency, human interaction and communication will remain key to the success of these same technologies. Whether it is in the development, the promotion and application, or the refinement of these technologies, people will always be central to these innovations. In fact, Pöyry (2007) noted that an over-reliance on ICT and a lack of personal interaction may be a hindrance to optimising expertise and skills from knowledge exchange.

Service providers often find themselves working in situations of isolation, which can inhibit their professional development as well as have a negative impact on their mental health and wellbeing. In fact, in 2010 Bartram and Baldwin reviewed all published literature on suicide risk in veterinary practitioners. One of the conclusions from this study was that vets are often professionally and socially isolated by their work in private practice, which may make them more vulnerable to depression and suicide. In the Netherlands a study completed by Jaarsma et al. in 2008, has resulted in the development of an integrated veterinary competency framework. The objective of this framework is to provide veterinary medical educators with guidelines for developing education and assessment programmes to better match the needs of present day vets in practice. The framework consists of eighteen competencies, categorised

into seven domains, at least two of which could be considered directly relevant to this study-collaboration and professional development.

The current reality in the public agricultural extension service in Ireland is that available resources are contracting. Advisor numbers in Teagasc (the national food and agricultural research and advisory body) have reduced by 44%, from 422 in 2007 to 235 in 2014 (Teagasc, 2015). Some countries e.g. Australia, have seen this change to their agricultural extension services in the extreme, with a complete move away from a state-funded public model of extension. According to Murphy et al. (2013) this has meant that the private-sector has evolved to fill this gap, but not without challenges. With the fragmentation of extension services across a diverse range of providers in Australia and New Zealand, the responsibility for building extension capability and professionalism has shifted to dairy-industry organisations and also to the private sector. This has had an impact on the professional development of their extension personnel as there is no longer a clear pathway of professional development. It has also created a disconnect in the feedback loops between farmers, extension and research. With a service provider mass in Australia that is more disparate and fragmented than ever, it is very difficult to engage with service providers to develop and deliver common messages.

The growing trend of moving away from a publicly-funded, central research and extension body also results in a shift in focus away from ‘public good’ towards commercial gain, and can lead to the end-user i.e. the farmer, questioning the independence of the information disseminated. In the UK, the privatisation of ADAS has meant that a huge number of various individuals and small organisations now occupy the research and extension space. However, even when ADAS was a public body, there was always a ‘periphery’ of agricultural advisors e.g. veterinary practitioners. This ‘periphery’ though, was unlikely to be recognised and valued, and even less likely to be supported. Work from the UK would not suggest that a return to a predominant publicly-funded body is needed, but rather that there is a need to embrace and support interprofessional working, and public and private sector collaboration. The question remains, how to coordinate and manage this system?

While Ireland has retained a strong, largely publicly funded research and advisory service i.e. Teagasc, this too can present a challenge. In the author’s experience when one organisation dominates the research and extension space, this can create a perception that the ‘peripheral’ extension services are less important or essential, and place little value on the knowledge resource within. This can create a challenging divide between the ‘central’ and ‘peripheral’ organisations, and add to the fragmentation of the agricultural service provision sector. This was documented recently in the PRO AKIS project, which was an EU-funded project looking at Agricultural Knowledge and Information Systems (AKIS) across all member states. An ‘inventory’ report was made on each country which mapped the knowledge networks of farmers within that country. As well as looking at the ‘vertical’ networks, between farmers and service providers, they also examined the ‘horizontal’ networks between service providers. The report on Ireland concluded that while there were strong links between Teagasc advisors and farmers, and Teagasc research and external research, the links between external research and farmers, and Teagasc advisors and external service providers (including

advisors) were weak or non-existent (Prager and Thomson, 2014). The project also shows that this challenge is not unique to Ireland. Fig. 2 shows the variation in linkages, from strong to limited or non-existent, between different bodies involved in AKIS in Ireland (Boyle, 2012). While this represents the linkages between groups, it is also important to consider the importance of linkages within groups. For example, the ‘Private Advisors/Service Providers’ group identified in this graphic is itself a diverse group of disciplines, often with little or no engagement or networks within.

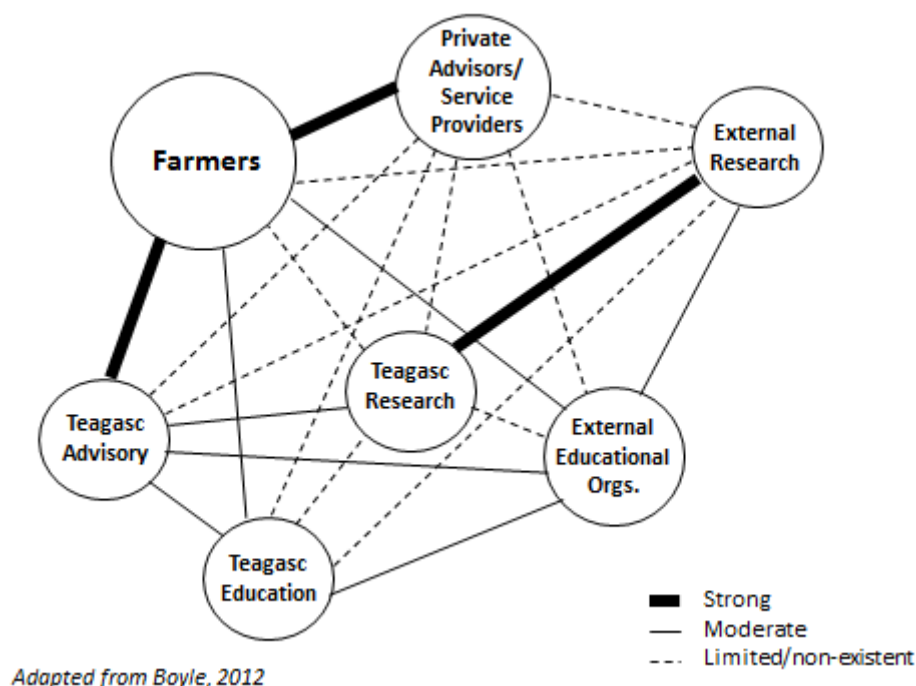


Fig. 2 Variation in the strength of linkages between bodies involved in AKIS in Ireland.

In its recent document “Strategic Pathways for the Teagasc Agricultural Advisory Service 2015-2020” (Teagasc, 2015), two of the critical pathways for success identified were:

-balance between an appropriately resourced public advisory service and a private consultancy service model
-continue to intensify and overhaul the Teagasc advisory service delivery model, through more outsourcing, strategic alliances, partnerships and other multi-actor approaches in agreed national and regional programmes.

The operation of both of the pathways, particularly the multi-actor approaches, will be enhanced and maximised if service providers on the ground are familiar with each other, and have started building networks and working relationships.

Recent work in Ireland, as part of Animal Health Ireland’s CellCheck programme has commenced building networks between some agricultural service providers (Animal Health Ireland, 2013). Vets, milking machine technicians and farm and co-op advisors have been

attending multi-disciplinary service provider training. The objective of this training is to develop trained teams of local service providers to deliver CellCheck Farmer Workshops. Training evaluation shows that more than three-quarters of the 390 participants felt that the opportunity to meet locals from other disciplines was one of the things they enjoyed most about the training. Early indicators suggest that the networks generated through this CellCheck training are also being used to support areas of work beyond the CellCheck programme. However, for service providers not actively involved with dairy farmers, or even more specifically in mastitis control, what opportunity exists for them to build cross-professional networks? In the absence of such a specific technical focus i.e. mastitis control, and a very prescriptive path post-training i.e. delivery of CellCheck Farmer Workshops, is it still beneficial and possible to develop cross-professional networks? Could service provider networks help address some of the current and future challenges that we face, as we strive to farm efficiently and sustainably in an ever-changing world?

This study aims to answer some of these questions. While no one sector, organisation or country has a perfect working model of cross-professional networks that could be replicated in Irish agriculture, this study has looked at various models and experiences, and attempts to identify their strengths and weaknesses. This study has also identified potential within the current Irish service provider landscape that could be built upon to develop broader multi-disciplinary networks.

Chapter 1. Benefits of networks

General principles/benefits.....“There is no strength without unity”

The concept of pooling strengths in order to achieve a greater outcome is not new. Networks exist in many areas of life, whether it is technology, transport or people. Transport networks are one example, where one train or bus on its own would be ineffective at servicing anything other than a very limited geographical area. However once a network is created, made up of multiple trains or buses that travel in different directions and at different times, and interact and ‘communicate’ with each other, an effective transport service can then be provided to a much broader region.

Networks can connect individuals and organisations, and can improve information diffusion, resource sharing and access to specialised assets. More and more, production of knowledge occurs through sharing information in a network, either face to face or virtually. One definition of a human network is “an extended group of people with similar interests or concerns who interact and remain in informal contact for mutual assistance or support”. This idea of ‘mutual assistance and support’ is very important. While the existence of a network may be of benefit to society and/or to individuals outside the network e.g. the Lions Club, the members of a network itself also need to benefit directly from their involvement in order to remain engaged.

Multidisciplinary networks and teams have been shown to be effective in many areas of society. For example, in the area of healthcare, a multidisciplinary approach to diagnosis, treatment and management is becoming more common as various health professionals work together as a team in order to achieve a better outcome for the individual. There are dedicated scientific journals, such as *The Journal of Multidisciplinary Healthcare* which reflect this 'team-based' approach to health. Many towns in Ireland have also seen the advent of 'Health Centres' - one premises/business which houses the services of various health professionals, including GPs, physiotherapists and pharmacists. While they may each be operating an independent business, by doing so under the one roof they can offer complementary services to clients, in an efficient and cost-effective manner. Some 20 years ago, the Department of Health recommended the establishment of multidisciplinary teams for mental health care, recognising that "a key strength of multidisciplinary teams is that the combined expertise of a range of mental health professionals is used to deliver seamless, comprehensive care to the individual". While the effective development and operation of these teams is not without its barriers, including a lack of resources (Mental Health Commission, 2006), it is recognised and accepted that learning to work together as a team confers benefits to both the members and the end users of these health care teams. It also should not be presumed that 'one size fits all' when it comes to developing and availing of multidisciplinary services in any field.

Agriculture

Could the same principles be applied in the agricultural sector? Do similar benefits exist, from encouraging a team-based approach to agricultural service provision? Professional farm advisory teams have been shown to be effective in achieving behaviour change and improving farm performance (Rodrigues & Ruegg, 2005). While these examples of teamwork are quite formal and structured approaches, which may or may not be applicable to (and replicable in) the field of agricultural service provision, it is fair to say that in order to create these formal structures some degree of network or 'connection' was required in the first place. How do these professionals come together to develop structured business models, if they do not already know and trust each other as professionals? While networking and teamwork are closely related, they are not the same thing-teamwork is the process of working collaboratively with a group of people in order to achieve a common objective, whereas networking can be defined as creating a group of acquaintances and associates and keeping it active through regular communication for mutual benefit. Indeed, networking between members of a team is essential for it to successfully pursue its objectives. Networking can happen with or without the development of teams. Even without the progression into on-farm teams, there are clear benefits from facilitating 'informal contact' between agricultural service providers from different disciplines and sectors i.e. networking.

Farm businesses are complex and farmers require a diverse range of skillsets and expertise to help maximise efficiency and productivity. In order to provide a comprehensive service to farmers, service providers need to be skilled in all relevant areas of the farm business. Alternatively they can choose to recognise and understand the complementary skills that

other providers have, and pool those strengths and skills to provide farmers with the most comprehensive service and support. A professional conferring a sense of authority on other professionals i.e. recognising them as an expert, builds credibility for both in the eyes of the client. Being able to say to a client “you need Seán on your farm to look at the nutrition and work with you on this” is a very positive form of service. It looks professional and instils confidence in the farmer that they are being signposted to an expert, when necessary. This concept of ‘business referral networks’ is well recognised in many areas of business. Nettle (2014) has suggested this as a possible means of providing farmers with an holistic service, and addressing capacity challenges within the agri-sector.

The Rural Development Programme 2014-2020 (DAFM, 2015) will focus on ensuring that participating farmers have access to a wide range of skills, by requiring facilitators to introduce additional relevant expertise to their discussion groups e.g. an accountant, an agronomist, a veterinary practitioner. While this is a very positive step, the current lack of relationships between some of these professionals may limit this opportunity.

By working in partnership, service providers can work to their strengths and maximise their impact on behaviour change. For example, two US studies of the Wisconsin MilkMoney programme (Rodrigues, 2004; Hohmann, 2012) showed that although veterinary practitioners were considered the most qualified to advise farmers regarding milk quality issues (78.6% of responses), farmers that learned about the programme through their extension agent were more likely to complete the programme and report a lower bulk tank somatic cell count. The explanation suggested was that while vets will have technical expertise in animal health, the extension agents are trained as educators with expertise in leading teams and keeping the meeting process going. Thus service providers will bring different strengths and skills to the table. In addition, more than half of the 192 farmers that were surveyed after conclusion of the MilkMoney programme felt that the team-based approach was one of the most significant strengths of the programme.

Cross-professional networks could be considered a type of agricultural innovation system (AIS). Innovation is defined as the process of creating and putting into use combinations of knowledge from different sources. To be termed innovative, the use of this knowledge must be novel to the farmer or the firm, neighbours and competitors but not necessarily new globally (OECD, 2013). A ‘system’ of innovation involves all the actors and their interactions involved in the production and use of knowledge, and the context (institutional and policy) that shapes the processes of interacting, knowledge sharing and learning. It recognises multiple knowledge bases, including research and others, and can adapt to an ever-changing environment. AIS are comprised of organisations, enterprises and individuals, interacting through networks, which are engaged in sharing and using different types of knowledge to support innovations in agriculture. Interaction between stakeholders that are different enough to have new knowledge, but related enough to understand each other seems particularly to lead to innovation-the sociologist Granovetter (1983) describes this as “the strength of weak ties”.

Developing cross-professional networks may be a way of addressing the gaps that can appear when there are resource shortages, and are a way for service providers to share knowledge and continue professional development. They may also inform research development by providing research institutes with ‘eyes and ears on the ground’.

Chapter 2. Case studies

As part of this study, the author explored various cross-professional structures in the field of agriculture, in Ireland and globally. Some of the models studied were examples of multi-disciplinary teams working with farmers in the area of direct service provision, while others were examples of organisations and associations with multi-disciplinary membership. The author also looked at cross-professional networks established specifically to enhance agricultural research and development. The commonality between the models studied is that they provide an opportunity for service providers from different sectors to engage and network with each other. These case studies demonstrate some of the benefits of cross-professional networks and the barriers to their success. Learning from the experiences of others also helps to identify some of the opportunities for the Irish industry. Some of these models are current, and while others are no longer active their associates would argue that networks that were created do not cease to exist just because a programme is no longer active or in receipt of funding.

Ireland

1. EuroMilk

In 2009/10, a pilot mastitis control programme called EuroMilk was coordinated by the study author. This research programme delivered through Teagasc, looked at the impact of milk quality teams on the udder health of 23 Irish farms, and also at the challenges to motivating behaviour change at farm level. At the start of the study, the programme coordinator relied on farmers to nominate their chosen team members, which included farm and co-op advisors, milking machine technicians, vets and farm staff. Many of these team members met for the first time at the first on-farm team meeting. There were many interesting findings from this pilot study-firstly, although very few of the team members knew each other beforehand, many stayed in contact and continued to work together after the study concluded. Most of the team members felt that it was a unique opportunity to meet with and learn from professionals from other disciplines-they enjoyed this aspect of the study and felt that it increased their own confidence as professionals. This increased professional cooperation and interaction was also an opportunity to upskill and exchange technical knowledge. Farmers also felt that interaction between the professionals provided them with an objective and comprehensive approach to improving the udder health of their herds, and gave them confidence that all aspects of the production system were being considered.

2. Animal Health Ireland

The EU's Animal Health Strategy (2007-2013) pertaining to general herd health, argued that in order to '*achieve success [in animal health management], we need to deepen and strengthen the existing collaborative approach, maintaining effective partnerships at all levels*' (European Commission, 2007). In Ireland, initial recommendations put forward by the Centre for Veterinary Epidemiology and Risk Analysis (CVERA) in UCD on the development of a national Herd Health Initiative emphasised the need for key players to '*work cooperatively towards a shared vision*' (CVERA, 2007). This cooperative approach materialised in 2009 with the establishment of Animal Health Ireland (AHI). AHI is an example of a network operating at organisational level. Its stakeholders include farm organisations, service provider bodies, processors and the government. Through its various national disease control programmes and farm-level projects, AHI has been nurturing networks between those actively involved in animal health. Resources are developed by Technical Working Groups dedicated to specific disease areas. These multi-disciplinary groups comprise of individuals from many industry sectors-researchers, academics, veterinary practitioners and specialist advisors. Several of the programme areas also have an Implementation Group, which is a group of individuals representing the various sectors of the industry-producers, processors, service providers and government. As a by-product of the tools and training created by AHI for farmers and service providers, some informal networks have developed between service providers that have an active interest in animal health and disease. In particular, the national mastitis control programme CellCheck, has been proactively building service provider networks between those individuals that are involved in mastitis control, by delivering multidisciplinary SP training. This is because mastitis, as a multifactorial disease, requires a multifaceted approach. This 'Stage 2' training which develops teams of trained local service providers to deliver CellCheck Farmer Workshops, has been received very favourably by SPs. However, this training has a very specific technical focus i.e. mastitis control, and a very prescriptive path post-training i.e. delivery of CellCheck Farmer Workshops. Is there a way to broaden this network-building, to embrace service providers working in other sectors, with other areas of agricultural expertise, and without such a prescriptive outcome?

3. Agricultural Science Association

Founded in 1942, the Agricultural Science Association (ASA) is the professional body for graduates in agricultural, horticultural, forestry, environmental and food science. ASA provides opportunities for members to continue their professional development, with events such as technical seminars, regional meetings, farm business tours and sales training courses. Through these activities, and the ASA Annual Conference, the association also facilitates networking between agri-professionals. Its members work in all sectors of the industry, and while traditionally membership was made up primarily of agricultural science graduates from University College Dublin, that has broadened in recent years to include graduates of other agricultural science courses from Waterford and Dundalk Institutes of Technology and other recognised foreign universities. Around 2010, an 'associate' membership was introduced, which invites graduates with a Level 8 degree (such as veterinary medicine) and that are working in the agri-food sector to join. However, while there are many eligible members in

the agri-food industry there has been minimal promotion to date and thus a lack of awareness of this potential networking opportunity within the industry. For example, of the current ASA membership of approx. 1,700 there are less than 30 associate members, with only a very small number of these from the veterinary profession. However, there are approx. 1,000 food animal veterinary practitioners currently registered in Ireland, which highlights the potential for the ASA to expand its reach and broaden the network across more professions.

The ASA is governed by a Council consisting of the President, Vice-President, Hon Secretary, Treasurer and up to 16 other council members. These are all voluntary positions. The President's position is a 12-month one, after which time the Vice-President takes over and another Vice-President is elected by members. The Council are supported by a full time Manager and a part time Office Administrator. Within the Council there are various sub-committees, assigned to work on a particular task or area. These sub-committees then make recommendations to council for final decision. The work and activities of the ASA are funded predominantly by members' subscriptions. Industry support is also essential, particularly for specific technical events and activities such as the annual conference. Activities are organised at a national level and are open to all subscribed members-regionally based activities are not currently a feature of the ASA events.

One of the challenges identified by the organisation is retention of young members. While membership is initially high among those graduating from agricultural science, this starts to drop off in the first few years in the workforce. This phase of career development can be quite challenging and daunting, and is exactly the time when young graduates could benefit from network support and knowledge exchange. To address challenges such as this, and opportunities such as growing associate membership, the ASA needs to identify and promote its 'point of difference' and ensure it is always relevant. It can do this by regularly communicating with current and eligible members, and assessing their needs and demands, which may change over time. It is the author's opinion that this 'point of difference' is its independence, and the opportunity it provides for professionals working in any sector of agriculture to network, upskill and exchange knowledge.

The ASA is currently undergoing a strategic review, with the intention of presenting a strategic plan to its members in September 2015. This will outline the vision and mission of the organisation, along with the strategic objectives for the future. This in turn will guide future development and work of the organisation and may suggest areas for further review, such as governance and funding. For example, increased regional activity could help to build strong local interprofessional networks, keep members engaged and active, and ensure relevance to members. However this would require regional council activity, which would in turn liaise with a national council. To be relevant and to fulfil the needs of all disciplines, the council needs to have a multi-disciplinary composition. Similarly, ASA may need to look at its funding model as part of its strategic plan. To deliver on its ambition, it needs to identify an element of secure funding that will ensure continuity and enable the organisation to develop and grow towards its vision.

International

1. University of Missouri Commercial Agricultural Programme

As part of the American LandGrant University system, the University of Missouri offers multi-disciplinary extension services through its Commercial Agricultural Programme (CAP). The CAP started in the late 1980's, when Rex Ricketts was appointed as the programme director. The CAP develops multi-disciplinary teams around current issues and industries, and team members work primarily with farmers and allied industry in the beef, crop, dairy, and swine industries in the state of Missouri. The focus of the CAP is to understand the different industry sectors, identify areas for growth and develop a strategic plan around these. Between university staff and additional recruitments, the programme team has grown to include expertise in areas such as economics, marketing, environment, engineering, soil, agronomy, genetics, nutrition and animal health, across all species.

Developing teams of motivated, technically skilled individuals and providing them with sufficient resources and autonomy are some of the factors that have contributed to the success of the CAP. Because of the funding received from other sources, the CAP does not charge for the extension services provided to producers. However it is the view of the director that farmers would be very willing to pay for such a service, as they value the quality of the service and the multi-disciplinary approach. In his words *“The multi-disciplinary team approach is extremely effective. When you have true multi-disciplinary teams working to solve problems, the more team minds that wrap around a project the better the product becomes. As teams work together, they identify each other's expertise. And the more they work together, the more they learn of that expertise”*.

The CAP co-exists with traditional extension agents in the region (who are state-funded, and thus also do not charge for their services). Initially when the CAP commenced, these regional extension agents viewed it as competition. However, very quickly they started to signpost producers to the CAP, in situations where they recognised that additional expertise or resources were required to address the farm problem. In these cases, CAP would include the local extension agent in the investigation and development of the farm plan. One of the key strengths of the CAP was the development of relationships with local extension agents and other agri-professionals, policy makers and authorities such as the Environmental Protection Agency. CAP recognises commercial agendas and vested interests as one of the challenges to extension.....*“These people need to be able to separate personal gain from industry good, and keep products out of the picture otherwise clients will not feel they are getting an objective service.”*

One recommendation from the CAP was that programmes developed for the agricultural industry need to be “built nimble”. The needs of the industry, and thus the related priorities will change, and a programme needs to be able to respond and resource new issues. This is reflected in the current activity of the university extension services, which have evolved from primarily servicing large food production units, to working with master gardeners and hobby farmers due to the demographic change in farming in the region.

2. Landbridge UK

Landbridge is a knowledge exchange network for researchers and rural professionals who advise farming and land businesses. Its aims are to provide a platform for interprofessional learning and debate among advisors from across the professions, and to provide opportunities for exchange with agricultural research communities. It contributes to advisor learning, networking and training, with events tailored to multiple professions. In doing so it aims to enhance advice to farming and land-focused businesses in the UK. Membership is free, with approx. 2,500 members from all disciplines and from all sectors.

Landbridge developed as a result of findings from a funded, multidisciplinary research project called ‘Science in the Field: Understanding the changing role of expertise in the rural economy’ (Economic and Social Research Council, 2012). This project investigated the existing and potential role of rural professionals as knowledge brokers between scientific research and land management practice, with a focus on how their knowledge and expertise are constructed and disseminated. One of the significant challenges encountered during this project was that with little connection between agri-professionals and researchers, and the public and private sectors, engaging with these people, harnessing their knowledge and disseminating common messages was very difficult. According to Jeremy Philipson, the Landbridge coordinator, there were three key findings from ‘Science in the Field’:

1. Rural professionals were important intermediaries in research, a resource which was often under-utilised. In fact they were often quite distanced from research.
2. The expertise that they brought, and how they developed it i.e. experiential (or ‘on the job’) learning, was an undervalued resource.
3. There was a lack of fora for interprofessional activity. There is a vast array of service providers that need to work together in the interests of the client, but how can they engage and how can they negotiate areas of expertise?

Thus Landbridge was established as a pilot project in 2012, with the aim of facilitating debate around interprofessional working and needs, and the implication for continual professional development (CPD). It also creates a network to strengthen feedback into research. An advisory panel was formed to advise on its direction, review activity and inform next steps; this also brings access to practitioner networks and helps enable dissemination of the outputs. The advisory panel met for the first time in June 2012 and includes working professionals and representatives from the British Veterinary Association, the Institute of Ecology and Environmental Management, the Royal Institution of Chartered Surveyors and the Agricultural Industries Confederation.

Landbridge received core funding from the Economic and Social Research Council until May 2014, which was to be the conclusion date of the pilot project. However work and activities have continued since then, highlighting the demand and need for a network such as this. Philipson feels that *“with land management questions cutting across multiple sectors, and wider animal health issues there is an ever-growing need for ‘joined-up’ thinking and*

action”. Many of the UK public sector organisations, such as DEFRA, Research Council etc. use this network as a means to work and engage with the private sector, which has not been possible in the past. With two-thirds of the network comprised of private sector individuals, this offers great potential and opportunity to the whole industry. Landbridge is currently involved with a DEFRA research programme, which will continue to provide some funding, and support it through the next steps. The Research Council in the UK sees the network as a mechanism to maximise their information reach, and Landbridge would suggest that perhaps the network could become more embedded within the research system. Landbridge would like to have more impact on research funders in the future; for example, the UK Agri-Tech Strategy (HM Government, 2013) is focussed on technological solutions in order to make agriculture more productive, but lacks any emphasis on social requirements and behavioural challenges. This could be improved by linking effectively to the rural professions through the Landbridge network.

3. New Zealand Institute of Primary Industry Management

The New Zealand Institute of Primary Industry Management (NZIPIM) was established in 1999, having grown from the New Zealand Society of Farm Management which was established in 1969. The objective of the NZIPIM is to build capacity and capability within rural professionals. In a country with many isolated areas, and lots of professional organisations, NZIPIM sees itself as an ‘integrator’ within the agricultural industry. It does this by providing various services for members such as continual professional development, networking opportunities (both regional and national), personal development and an information platform. It is regarded as a respected and credible professional association, and acts as a representative body for media and government, among other bodies.

There are various types of membership, including ‘associate’ for those that do not fulfil all the membership criteria, and ‘registered’ for those seeking greater recognition by their peer group for their expertise. It is subscriptions from these members that primarily funds the work of the institute. The institute also receives some funding from ‘industry good’ organisations such as DairyNZ to support particular areas of work, such as the development and delivery of accreditation schemes. Regional events often receive specific industry sponsorship. There are also some strategic partnership arrangements, for example with the Ministry of Primary Industries, and this is a potential area of growth for the future. Stemming from its origins as a farm management society, its membership has traditionally been predominantly farm consultants. In the past few years, there has been an increase in membership among rural bankers, farm accountants, property evaluation personnel, employees of ‘industry good’ organisations, vets and other specialists such as irrigation or environment consultants. This changing composition of membership is a reflection of the evolving industry and demands of farmers.

The organisation has a central office based in the capital, with a CEO and two staff members appointed in the north and south islands. There are 10 regional branches throughout both islands which are run by committees made of volunteer members. There are varying degrees of activity, demands and interests between the various branches and they are responsible for organising appropriate, regional activities often with local sponsorship. The head office plays

a central role in supporting these activities through providing communication services, promotion and sponsorship where necessary. The head office is also responsible for organising the NZIPIM annual conference and for the delivery of institute accreditation schemes. There are currently two accreditation schemes (People Management, and Farm Systems), that have been developed and delivered in partnership with DairyNZ.

There has been a strong drive over the last two to three years, to develop the status and the activity of the organisation. Funding was put in place to develop and grow a strategy for the organisation, with the appointment of two additional individuals (in addition to the CEO) to help co-ordinate and identify appropriate events around the country. From approximately 20 events nationwide in 2013, to 40 events in 2014, it is expected that there will be approx. 60 events held throughout 2015. There are two predominant streams to the activities of the organisation-professional and social. To the members, the value of networking with other professionals is in providing an opportunity to understand what others do, and being able to tease out problems with peers. The social aspect is no less important. In fact, a recent suggestion from one of the regional branches was that some of the events should focus purely on a social activity and “*catching up over a beer*”, rather than necessarily being underpinned by a technical upskilling event.

NZIPIM works on five strategic platforms; relevancy, professionalism, constructive partnerships, careers and resourcing. Questions that NZIPIM regularly asks of itself are “Are we meeting the market?” and “Where is our point of difference”. By focussing on these areas, they maintain their relevance. A goal for the future is the creation or development of business referral networks, which to date have been slow to develop, and happen in an ad hoc way when they do. The biggest challenge for members (in terms of networking, upskilling and developing new ways of working) is that service providers are often time-poor. The world of technology means that there is rarely an opportunity to ‘switch off’ and find time to think about working differently. Also, without a ‘burning platform’ driving change, or a very clear benefit to be gained from change, people are often reluctant to change the status quo. So, if the need for business referral networks can be created (by the farmer, or the broader industry or indeed both), and/or effective working models can be piloted and demonstrated, could these referral networks grow in popularity? An advantage that the NZ agricultural industry has is that through the NZIPIM there are networks already established from which potential business referral networks can grow.

4. Agricultural European Innovation Partnership (EIP-AGRI)

As part of the EU’s growth strategy for the coming decade (European Commission, 2010), five European Innovation Partnerships (EIPs) have been launched in different sectors, one of which is agriculture. All EIPs focus on societal benefits and fast modernisation, and do so by harnessing expertise and skills from multiple sources. Multidisciplinary knowledge and teamwork is at the core of how EIPs work. They support the cooperation between research and innovation partners, and develop networks to achieve this. The agricultural European Innovation Partnership (EIP-AGRI) was set up in 2012 as a new way of helping the

agricultural and forestry sector to become more productive, sustainable and resilient, in the face of such challenges as growing competition, increased market volatility, climate change and increasingly stringent environmental rules. The EIP-AGRI focuses on forming partnerships and linking the various actors in the EIP-AGRI networks, through different types of innovation actions such as Operational Groups and Focus Groups. The EIP-AGRI network is supported by the EIP-AGRI Service Point. This Service Point is responsible for sharing knowledge, connecting people, coordinating activities of the EIP-AGRI network, and hosting and disseminating information and outputs through its website. Its primary target is to stimulate the interaction between all people involved in the EIP-AGRI network: farmers, researchers, advisors, NGOs, member states, businesses, public authorities.

As part of this study, the author had an opportunity to participate in an EIP-AGRI Focus Group, exploring the challenge of farm-level biosecurity. The EIP-AGRI Service Point published a call, looking for people with various competencies (farmers, researchers, advisors, veterinary practitioners etc.) to meet to discuss challenges, share knowledge and experience, identify research gaps and priorities, and propose solutions to the specific topic. Over a two-day workshop, the following questions were dealt with:

- Characterising biosecurity measures: what are the key elements for on-farm biosecurity measures?
- Motivators and obstacles: What are the motivators and obstacles to the implementation of biosecurity measures?
- Knowledge exchange and uptake: which biosecurity measures require additional knowledge exchange and demonstration to be implemented? What are the appropriate formats (using the EIPAGRI tools) to stimulate the uptake of biosecurity measures?
- Research needs: which elements of on-farm biosecurity measures require additional experimentation and research? What are the appropriate formats (using the EIP-AGRI instruments) to identify research needs from practice? How can practical research be stimulated?
- Networking and cooperation: which partnerships are needed to promote biosecurity at farm level?

Approximately 50 individuals attended, from 23 member states, bringing together a variety of skills, expertise and experience. The group comprised of farmers, farm organisation representatives, researchers, farm advisors, veterinary practitioners, government representatives and industry experts. The work and conclusions of this group were documented and published in a final report (European Commission, 2015). From this workshop, challenges and research gaps have been identified, partnerships have been started (between different disciplines and different countries) and opportunities for future collaboration have been highlighted.

Chapter 3. Operational challenges and limitations

Network or notwork?.....“it’s a great idea but.....”

This report has already discussed how building broader networks and working in teams can be advantageous to both the service provider and the end-user of their services, and has presented several working examples. However, it would be idealistic not to recognise and explore some of the barriers to building these networks and working as a team. From published literature, and the experiences of those involved with the case studies presented, there are some common obstacles present.

Firstly, the experience from many of the case studies presented is that available **time** is often a limiting factor. Peoples’ working lives are already busy, and in many cases are getting busier with increased bureaucratic burdens, and a reduction of available resources. Trying to find time to attend ‘more’ meetings or training events can be a real challenge, no matter what the potential benefits are. This is particularly true when there is not an immediately tangible and quantifiable return. This emphasises the need to communicate the message about the efficiencies of networking. Rather than looking at networking as an additional ‘job’ to be done, SPs need to be encouraged to look at networking as a means of upskilling and improving client services in a cost and time-efficient way. With networks, SPs can quickly and easily tap into complementary skills and expertise when necessary, instead of trying to be all things to all people. Avoiding duplication of existing activities is important if a service provider network is to be valued and successful. Rather than creating another structure for people to join, it is better to consider what is currently in place and see if that can be enhanced to deliver the objective.

Competition between professionals can also be a challenge, particularly when initiating networks. In the author’s experience, many professionals have a ‘healthy’ suspicion of other professionals working in the same region, and may worry about losing clients or business. However, this suspicion is often borne out of ignorance of and isolation from other professionals. Once SPs have an opportunity to connect and understand the different roles that they play, and varying skills that they possess, what was a perceived threat becomes a potential opportunity e.g. knowledge exchange, improved service to clients, referrals etc. As Jeremy Philipson of Landbridge (2015) said *“How do experts work with other experts? How do we build respect across the professions? It’s not necessarily a problem, but it needs to be understood and managed. This is an opportunity for learning across the professions-we say to people “come out of your own silos and enter an environment that allows you to look at the interface (between professionals)”*. Experience from the UK Landbridge programme, is that some professions and/or individuals are more secure than others about interprofessional working and are happy to signpost to other professionals. It was noted that UK veterinary

practitioners for example, were very willing to bring in outside expertise when necessary. Some others prefer to manage the inter-professional working out of the view of the client.

While it may be accepted that working as a team and networking with other disciplines has clear benefits, in the author's experience agricultural professionals rarely have an **opportunity to meet** professionals from other disciplines. In Ireland, as in many other countries, there is no structured mechanism for service providers across all agricultural sectors to get to know each other. Inter-disciplinary professional development is uncommon, as most service providers attend profession-specific training. Unless connections with service providers from other sectors are facilitated in some way, it is not uncommon for several agri-professionals to work in one region yet have no knowledge of each other. Developing professional relationships is a lot easier when there are pre-existing personal relationships.

Feeling intimidated, or fear of the unknown can also be an obstacle-sometimes introducing oneself can be scary! For example, while experienced agri-professionals are an invaluable source of knowledge and information for newer graduates, and are often very important mentors, without facilitating these connections young agri-professionals can often feel intimidated by this wealth of experience and knowledge. All too often we hear someone say after a conference "I really wanted to ask her something about grassland management, but I don't really know her and didn't want to look stupid"? It is not only young graduates that can encounter this 'imposter syndrome'. Joe Horner (2015), from University of Missouri commented that "*when a farmer suggests "my vet, nutritionist and bank manager are going to meet next week and I want you to come along too" it's refreshing and intimidating. There is the fear of losing face, or realising that you're not an expert on everything!*". The opportunity to exchange knowledge and work together is greatly enhanced if these personal connections have already been initiated.

Employment situation can also be an impediment to interprofessional working. Agri-professionals work in various situations in Ireland; some are self-employed while others are employed in a salary position, some work in the public sector and others work in the private sector. For some, investing time in a knowledge exchange network will be seen as an important part of their role profile; while for others it may simply be seen as time spent away from income-generating or 'real' work. Communicating and promoting the value of networking at an organisational level, will be an important step for the industry. There is no point in trying to encourage individual agri-professionals to network and make interprofessional connections, if their parent body or employer doesn't also embrace and support the concept. Managing the expectations of both the participants in a network and their employers is also important. The reality is that returns on this investment may not be tangible, or immediately apparent. However, it has the potential to add value to the services currently offered by a company or individual, improve the direction and development of research and enable service providers to upskill and work more efficiently.

Chapter 4. How to initiate and sustain networks

“So, what do we need to make this thing work?”

While there are some factors that can impede the successful initiation or growth of interprofessional working, there are also factors that can enhance and support it. If attention is given to nurturing these factors, rather than on the reasons not to try, interprofessional working could be facilitated in Ireland, to the benefit not just of those directly involved, but also to the greater industry.

One of the key requirements for interprofessional work is having a **driver**. Although there may be lots of clear benefits from creating networks in any area, it can remain an idealistic vision unless an individual or a body takes responsibility for coordinating and driving it. It is also important that this driver has no vested interest in the initiative, if they want to garner trust with and between the participants. This idea of ‘brokering’ is well documented, particularly in the context of agricultural innovation systems (AIS) (Klerkx & Gildemacher, 2012). As previously described, AIS are comprised of organisations, enterprises and individuals, interacting through networks, which are engaged in sharing and using different types of knowledge to support innovations in agriculture. The multiples of stakeholders involved, sometimes with complex interactions can present a challenge for cooperation. “Innovation brokers” are thus an individual or organisation, which bring these various stakeholders together and facilitate their interaction, thereby deliberately acting as a catalyst for innovation and activity. While people sometimes think of brokering as acting between two parties for personal gain, the concept of the innovation broker is that of an ‘honest broker’-a relatively impartial third-party, bringing people together mainly for the greater good, and without a vested interest. Impartial, honest brokers, because of their less-biased position and the ‘bigger picture’ view of the system that they hold, can often forge contacts between parties that would not normally cooperate. Innovation brokering is different from agricultural extension in that instead of being a one-to-one intermediary between research and farmers, instead it is an intermediary that creates and facilitates many-to-many relationships. Klerkx would maintain that although public organisations e.g. research and advisory bodies, could perform innovation brokering as part of their mandate, many retain a linear, transfer-of-technology mindset, which is incompatible with brokering innovation systems. The key functions of an innovation broker are:

- to analyse the context and articulate demand (for technology, knowledge, funding etc.),
- compose networks and
- facilitate interaction.

Animal Health Ireland could be described as a broker in the area of agricultural innovation in animal health; in fact, the CellCheck programme has been studied as an example of a problem-focused innovation system, with CellCheck Regional Coordinators playing the role of honest brokers (Ryan et al., 2013).

Trust is a fundamental ingredient for all relationships, personal or professional. Trust between individuals is essential for networks to flourish, and for on-farm teams to work effectively. A key to generating trust is the presence of an ‘honest broker’. Trust is also important in knowledge exchange between the farmer and service provider(s), and between service providers and researchers. Understanding and respecting each other’s professional roles is an important step in building that trust.

Relevance to the various stakeholders is important to attract and retain participants in the network. Whether it is stage of career, employment status, or skillset, different network members will have slightly different needs. Hence the importance for the innovation broker to ‘analyse the context and articulate demand’. In this way, the needs of the various stakeholders can be met, building the capacity of the network and providing benefits for all the individual members. This also addresses the issue of available time-being a part of the network becomes something that members feel they get value from, rather than being seen as another chore.

Communicating the positive benefits of interprofessional networking, and building awareness of the opportunity to network is important for a network to grow and strengthen. For example, currently the ASA offers ‘associate’ membership to professionals working in the agri-food sector, who have a primary degree in an area other than agricultural science. However, the awareness of this opportunity, and hence the uptake is minimal. Promoting the strengths and benefits of cross-professional networks to organisations at a management level is also necessary, and is an important role for the ‘honest broker’. This exercise in stakeholder management builds the credibility of the broker, and provides them with the mandate to act as the intermediary for the various stakeholders in the network. The broker becomes accepted as the ‘go-to’ person or organisation. Employees working in an environment where networking is supported and embraced by their management will be more likely to participate in a network. Promoting the value of networking within all the relevant organisations could create multiple opportunities for service providers to engage. For example, if farm organisations communicate the value of cross-professional networks to their members, it may encourage farmers to consider ways in which they can initiate and support these networks. One possibility could be for farmers to host a simple ‘meet and greet’ on-farm, for their own regular service providers to get to know each other.

Funding the work of innovation brokers is a constant challenge. Experience to date shows that innovation brokers help build synergy in AIS, but their ‘behind-the scenes’ role conceals their impact and may limit funding support. Instead funders invest in new technology and research initiatives, including programmes, without looking at how they can maximise their success, by linking these initiatives effectively to the rural professions. The question of how to measure and document the impact of innovation brokers within AIS is one that needs to be

looked at, in order to change the perception of their value, and justify investment in the brokering role. The possibility of long-term investment needs to be explored, to ensure continuity of innovation brokers. Without this, persistent innovation system failures such as fragmentation and lack of coordination can prevail.

Many of these requirements are summed up by Rex Rickets, the director of the Missouri CAP, who on his retirement said *“Its continued success will depend upon whether or not it becomes a University of Missouri priority and whether it can operate in an environment that will allow it to function as a true multidisciplinary program with minimal administrative interference. The CA Program requires a director that can continue and further develop strong relationships with agriculture leadership.”*

Conclusions:

Based on the literature, and the experiences of the examples presented, several conclusions can be drawn regarding agricultural service provider networks:

1. Networking and teamwork are closely related, but they are not the same thing. Networking can happen with or without the development of teams.
2. Cross-professional networking provides benefits for farmers, by providing more holistic, comprehensive services and a broader cohesive knowledge base. The members of the network benefit from knowledge exchange and upskilling, business referrals and social interaction with other professionals. Industry benefits from an improved feedback loop to research and development.
3. There are distinct challenges to creating and operating cross-professional networks, which includes competition between professionals. Finding time to participate in a network, as well as support from the service provider’s parent organisation/company can also be an obstacle.
4. In general, the positive outcomes from networking outweigh the real challenges and the perceived ‘threats’.
5. An ‘honest broker’ that can act as an intermediary between the various stakeholders, and facilitate their interaction is one of the fundamental requirements for successful cross-professional working.
6. Nurturing trust, showing relevance and building awareness of the networking opportunities are other important building blocks, all of which the ‘broker’ can play a role in.

7. Stakeholder engagement at a management/organisational level is important to create an environment that embraces and supports the concept of service provider networking, builds the credibility of the broker, and provides them with the mandate to act as the intermediary for the various stakeholders.
8. The challenge of broker funding needs to be addressed. The ‘behind-the scenes’ role of the innovation broker conceals their impact and may limit financial support. The business case needs to be made to funders to invest not only in new technology and research initiatives, but also in the capacity that can support and maximise the success of these initiatives.

Recommendations:

Based on the learnings from this study and the conclusions drawn, there are several recommendations that can be made:

1. Avoid duplications and reinventing the wheel!

Rather than trying to develop new networks, look at what is currently available and active in Ireland, and develop and enhance that to achieve networking opportunities across all agricultural disciplines. Instead of scheduling networking and training events during work hours or in the evenings, consider hosting them over breakfast for example, thereby interfering less with the service provider’s day (and giving them a good start to the day!).

2. Identify an ‘honest’ broker.

One of the key requirements for developing effective and successful networks is the existence of an ‘honest broker’ to act as an intermediary between the various stakeholders, coordinate networks and facilitate engagement and activities. This broker needs to be respected as an inclusive, neutral body. For example, the ASA currently carries out many of these roles, and in theory is open to all agricultural professions to participate. However, in practice there are some professions e.g. veterinary practitioners, which are unaware of this opportunity. Addressing this awareness gap would broaden the current network. In establishing itself as a recognised broker of cross-professional networks, the ASA may need to examine its governance and funding structure in order to deliver on this objective and the related activities. For example, to maintain relevance and fulfil the needs of all disciplines, the council needs to have a multi-disciplinary composition.

3. Nurture collaboration and networking at an organisational/management level.

If service providers are participating in cross-professional networks because the concept is supported and encouraged within their parent company/organisation, as

well as out of personal interest, this will improve ongoing engagement with the network. Improving the recognition at management or organisational level that networking is useful, is a way of amplifying this message on behalf of the broker. This stakeholder engagement is a role that could be facilitated by the 'honest broker'.

4. Identify the needs and demands of potential network participants.

Understanding the world of the various service providers, and identifying their needs is an important step if a networking body is to be perceived as relevant to the various potential participants. Coordinating activities at a regional level, as well as nationally is important for developing relationships between local service providers, for practical business referral purposes for example. The needs and challenges of recent graduates will not be the same as those who have worked in the agri-food sector for some time, so stage of career is important to consider when tailoring activities. Understanding the resource requirements to support network participants is important e.g. do on-line discussion fora or cross-professional discussion groups play a role?

5. Include the skill of interprofessional working as part of professional training.

As previously discussed, there are some challenges to initiating and sustaining service provider networks. One of the challenges can be competition between, and suspicion of other professions. People don't always automatically know how to work together, or be part of a team. However, this can be managed when SPs understand the different roles that they play, the varying skills that they possess, and how to combine those complementary skills to maximum benefit. The skill of interprofessional working should be included in continual professional development (CPD) or even earlier, during graduate training.

6. Secure funding to support ongoing cross-professional networks.

Ultimately a secure source of funding is an important requirement for effective innovation brokering. Considering that there are both personal gains for network participants (knowledge exchange, potential business referrals, upskilling) and broader industry benefits (improved services to farmers, and feedback loops to research) it is reasonable to consider a combination of both member subscriptions and industry support as appropriate means of funding to support cross-professional networks. This can be a challenge as there is a limit to what network members will pay as a subscription (which will relate to their perception of how valuable the network is to them), while industry support for brokering can often be limited (because its role and impact is often not clearly demonstrable and measurable).

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Project Title:	Building strong professional networks “Ní neart go cur le chéile”/“There is no strength without unity”
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Objectives	<ol style="list-style-type: none"> 1. To see if agricultural service provider (SP) networks have a positive role to play in knowledge exchange 2. To identify the barriers to establishing and sustaining SP networks 3. To determine the requirements for initiating and maintaining successful SP networks
Background	<p>Farmers currently engage with many varied SPs as part of the management of their business. These SPs rarely engage with, or even know each other. Yet, they are all working towards a common goal. As the demand for more knowledge and skills increases, and resources get scarcer, SPs need to look at how to maximise their skills and increase efficiencies.</p>
Findings	<ul style="list-style-type: none"> • SP networks facilitate knowledge exchange between SPs and more comprehensive services to farmers, and improve feedback loops to research. • Barriers include available time, lack of opportunities to meet, competition and fear of the unknown. • Successful networks need an honest broker to facilitate them, building trust and relevance for members. This requires funding, and promotion.
Recommendations	<ul style="list-style-type: none"> • Identify an ‘honest’ broker e.g. ASA, in Ireland. • Nurture collaboration/networking at an organisational level. • Identify the needs and demands of potential network members. • Include the skill of interprofessional working in professional training. • Secure funding to develop/support cross-professional networks.