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Development of a toolbox for network learning within the European Agrifood Industry

Key external stakeholders:

Food SMEs (including their suppliers and customers), network managers, policy makers in innovation and learning, food enterprise support agencies, researchers and research institutes

Practical implications for stakeholders:

Improving the strategic network behavior of food SMEs through the development of the NetGrow Toolbox has been the core driver of the project.

- The NetGrow Toolbox can support food SMEs to approach networking in a more structured and strategic way. This approach can be expected to lead to a more efficient and successful innovation process.
- The NetGrow Toolbox provides network managers with a tool to objectively evaluate their network's performance, which can help improve the innovation activities and services that they offer to members.
- From a policy perspective, the NetGrow toolbox provides stakeholders with a mapping of food-related innovation networks in Europe (currently only covering the nine partner countries), and key policy recommendations to create an environment that is supportive of open innovation involving food SMEs and networks.

Main results:

- Food SMEs have a preference for networks with particular characteristics. Companies interviewed for this study preferred to join a network composed of supply chain members (vs involving research institutes); where information was shared confidentially (vs openly), and focused on building the firm's network of partners (vs developing innovations). SME's preferences were dependent upon the strategic orientation of the SME firm.
- The choice of governance model adopted by networks impacted on both their ability to achieve their goals and promote interaction between network members. More centralised decision-making in networks was significantly linked to improved network performance.
- Creating the necessary social context within high performance networks entailed high levels of social interaction, shared vision and shared language amongst network members. The level of social interaction was in turn influenced by the use of coordination mechanisms.
- The research undertaken by the NetGrow Consortium provided the evidence base for the development of the NetGrow Toolbox. It consists of nine hands-on tools where each tool is ordered in a logical way, but can also be used independently of the other tools.

Opportunity / Benefit: Networking with other organisations can help SMEs develop their operations and adopt innovative practices. Adoption of the NetGrow Network Learning Toolbox (based on the research conducted within the project) will assist food SMEs to identify suitable networks, and to get the most out of them. It will also benefit network managers by helping them to better meet member goals and expectations and to evaluate the network's performance. Finally, it will inform the design of policy initiatives to promote a supportive environment for creating and developing formal networks that promote learning and innovation amongst food SMEs.

Collaborating Institutions:

Gent University (Coordinator) (Belgium), Instituttet for Fødevarestudier & Agroindustriel Udvikling (Denmark), Institut Polytechnique LaSalle Beauvais (France), University of Bonn (Germany), University of Debrecen (Hungary), University of Bologna (Italy), Food Valley NL (Netherlands), Skane Food Innovation Network (Sweden)

Contact Maeve Henchion

Email: maeve.henchion@teagasc.ie.

http://www.teagasc.ie/publications/

Teagasc project team: Dr Maeve Henchion (Principal Investigator)
                              Dr Douglas Sorenson
External collaborators: Prof. Xavier Gellynck (Coordinator) (Gent University)
                              Ms Karen Hamann (Institute for Food Studies & Agro Industrial Development)
                              Dr Loïc Sauvée (Institut Polytechnique LaSalle Beauvais)
                              Prof. Gerhard Schiefer (University of Bonn)
                              Dr Janos Felfoldi (University of Debrecen)
                              Prof. Davide Viaggi (University of Bologna)
                              Dr Frances Fortuin (Food Valley NL)
                              Dr Magnus Nilsson (Skåne Food Innovation Network)

1. Project background:

Research has shown that companies that are involved in networks are more innovative than others. Networks can help companies, and food SMEs especially, to gain access to external resources including finance, skills, information, markets and technologies. This inflow of knowledge from a network can therefore compliment the internal resources, competencies and organisational know-how and knowledge of companies, which can play an important role in the exploitation of new market opportunities, and the diffusion and adoption of innovations. This raises the question: why are all companies not busy networking? The answer is that, like everything, networking costs time and money. Acquiring external knowledge and resources is not at all easy; it usually goes hand in hand with many challenges and the process can be a daunting task. Collaboration within networks requires certain competencies and skills on the part of companies, as well as structures and procedures to promote knowledge sharing. The effective management of the network to promote knowledge transfer and collaboration between companies is also an important determinant for success.

The NetGrow project was thus established to provide much needed support to network managers, to companies, and foods SMEs in particular, for achieving higher levels of business performance through network participation. The NetGrow project attempted to provide a deeper understanding of food SMEs' network participation, and the inter-relationships between food SMEs' strategies, their network preferences, and the design of future networks. It also aimed to contribute to an improved understanding of the determinants of network performance, the identification of suitable metrics for evaluating the performance of network entities, and to provide guidance for appropriate governance structures for managers of these networks. This large body of work provided the evidence base for the development of the NetGrow Toolbox, which represents the final outcome of this project. It was designed according to the needs of network managers and food SMEs, to address the very issues and challenges that food SMEs face with regards to innovation and networking.

2. Questions addressed by the project:

- What are the key success factors and barriers to learning and innovation in formal networks?
- What are the key characteristics of networks that underlie the preferences and decisions of food SMEs in joining a formal network?
- What are the key determinants of network performance in formal networks?
- Which practical business tools should be developed to enhance the capacity of food SMEs, network managers and policy makers to manage their network(s) strategically?

3. The experimental studies:

Study 1: A case study analysis of 28 formal networks across nine European countries (BE, DE, DK, FR, HU, IE, IT, NL, SE) was undertaken. Each network was analysed through face-to-face interviews (n=270) with a variety of stakeholders active in the each network.

Study 2: A combination of a plenary brainstorming session (n=29), national brainstorming sessions (n=47), and a two-round questionnaire of internal voting using the Delphi technique (n=43) involving food SMEs, policy makers, and national/international experts in open innovation and competitiveness, across six European countries (BE, FR, HU, IE, IT, SE), identified the most important attributes to learning and innovation in formal networks. This formed the basis for a conjoint-based online questionnaire (n=231), which identified food SME preferences for different types of formal networks.

Study 3: A synthesis paper on the key determinants of network performance formed the basis for the

Contact   Maeve Henchion   Email: maeve.henchion@teagasc.ie.

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development of a prototype network assessment tool. The prototype network assessment tool was then integrated into a quantitative survey investigating the antecedents of network performance. The resultant online questionnaire was completed by the management (n=23) and membership (n=195) of 23 formal networks across six European countries (BE, DE, DK, HU, IE, NL). This was followed by a qualitative soft laddering study (n=96) based on means-end chain theory which mapped the consequences of network performance from the perspective of different network stakeholders.

Study 4: The prototype NetGrow Toolbox was initially developed by combining theoretical literature and industry reports with the research findings from the preceding work packages and business field expertise. Consultations were then held with up to 3 industry experts in all nine countries (BE, DE, DK, FR, HU, IE, IT, NL, SE) to critically evaluate the prototype NetGrow Toolbox and to assess its effectiveness and attractiveness for food SMEs. This was followed by a two-stage market-testing of the NetGrow toolbox involving application of the toolbox by four regional food networks (BE, HU, DK and IT) over a 3 month period. At the end of the testing period, a workshop was held to evaluate how practically useful the individual NetGrow Tools were, and revealed suggestions for further improvements, leading to the development to the final version of the NetGrow Toolbox.

4. Main results:

Study 1: The case study analysis categorised formal networks into one of four groupings, which shared similar characteristics, and these were (1) networks linked to a focal group for training, research, or consulting; (2) networks focusing on product or process development; (3) promotional networks, and (4) networks for open exchange and social networking. The main characteristics of each grouping were subsequently profiled. Overall, the case study analysis provided new insights and learning into the social interaction and knowledge exchange, competence development, coordination (organisation) and management of implementation that takes place within formal networks across Europe.

Study 2: The choice-based conjoint survey showed that most food SMEs preferred a network composed of manufacturers and chain members, and were less likely to join a network that included research institutes. Given the choice, most food SMEs preferred to join a network where information was shared confidentially among network partners rather than join a network where information was shared openly. Food SMEs also expressed a preference for networks aimed at building the firm's network of partners over networks aimed at helping firms develop innovations. Further analysis revealed network preferences were dependent upon the strategic orientation of SME firms.

Study 3: The quantitative survey identified network behaviour as the most important determinant of network performance. Social interaction as a key dimension of network behaviour was deemed important for the development of cognitive social capital. Both social interaction and cognitive social capital promoted knowledge sharing in networks. Formalised coordination mechanisms helped to develop both social interaction and trust for all types of networks, and significantly improved the network performance of supply chain type networks. The survey also revealed that more centralised decision making in networks was significantly linked to improved network performance. The qualitative soft laddering study revealed that disparate network stakeholders held different expectations with regard to the benefits from participation in formal networks. For food SMEs, participation in a high performance network was strongly associated with improved financial performance through the realisation of operational efficiencies. In contrast, customer satisfaction and meeting their own organisational goals were the primary motives for network participation by knowledge providers. While knowledge providers believed that participation in a high performance network would lead to improved financial performance for food SMEs also, they expected such benefits to be realised through their [the knowledge providers] contribution to innovation levels in firms. Customer satisfaction (i.e. network members) was most important to network stakeholders performing intermediation roles such as network managers and policymakers.

Study 4: The NetGrow Toolbox consists of nine hands-on tools that can be used by different target groups:
- The 'Why Networks Work' tool illustrates how finding the right network can benefit food SMEs;
- The 'Find your Network' and 'Identify your Needs' tools are intended to help food SMEs in the process of network selection;
- The 'Evaluate your Network' and 'Match your Needs' tools are designed to help food SMEs translate their company's ambitions, challenges or problems into expressed needs to be addressed by their network(s);
- The 'Define Innovation Process Steps' tool can assist SMEs to critically evaluate their own

innovation process and to determine which steps in the process require support from their network(s);

- 'Creating Excellent Networks' and 'Customer Satisfaction' are tools specifically developed for network managers to align their network offerings to the needs of food SMEs;
- The toolbox provides recommendations for policy makers on how to create optimal conditions for food networks as a way to increase innovation, economic growth and sustainable competitive advantage of the food sector in Europe.

5. Opportunity/Benefit:

Networking with other organisations can help SMEs develop their operations and adopt innovative practices, thereby contributing to their competitive position and growth. Adoption of the NetGrow Network Learning Toolbox (based on the research conducted within the project) will assist food SMEs in finding the best network for their business. It will also support SMEs to improve their network behaviour, and to use their networks in a more strategic fashion. Its implementation will help network managers to align network activities to member goals and expectations, and assist in the evaluation of their network's performance. Finally, it will inform the design of future policy initiatives to create a supportive environment for the creation and development of formal networks that promote learning and innovation amongst food SMEs.

6. Dissemination:

The NetGrow Network Learning Toolbox is available for download from the toolbox section of the NetGrow website (www.netgrow.eu/toolbox). The NetGrow Consortium's vision is to turn the outputs of the NetGrow project into an international forum for knowledge exchange and capacity building, which will promote the best practices of management of food sector networks, showcase the best examples of establishing and developing sustainable food sector networks, and provide new insights from researchers. Further information on the international forum and the NetGrow Toolbox can be gained from Karen Thorsted Hamann, Managing Director (IFAU) (Denmark): karen@ifau.dk.

Main publications:

Garbade, P. (2014). *Management of Innovation in Networks and Alliances*. Wageningen: Wageningen University. (ISBN 9789461738127).

Henchion, M. and Sorenson, D. (2013). Country report – Ireland. In: *Mapping Formal Networks and Identifying their Role for Innovation in EU Food SMEs* (Prof. Dr. Gerhard Schiefer and Dr. Jivka Deiters, Eds.). Germany: Bonn University. (ISBN 9783941766167).

Kühne, B., Lefebvre, V., Cochez, C. and Gellynck, X. (2013). The Importance of Networks for Knowledge Exchange and Innovation in the Food Industry. In: *Open Innovation in the Food and Beverage Industry* (Marian Garcia Martinez Ed.). Cambridge: Woodhead Publishing. (ISBN: 9780857095954).

Popular publications:

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The NetGrow Newsletter:

- Issue 6 (29th April 2014)
- Issue 5 (13th December 2013)
- Issue 4 (30th July 2013)
- Issue 3 (14th January 2013)
- Issue 2 (16th April 2012)
- Issue 1 (29th November 2011)

7. Compiled by: Drs Maeve Henchion and Douglas Sorenson

Contact   Maeve Henchion   Email: maeve.henchion@teagasc.ie.