Preliminary Study of Models and Literature on Knowledge Transfer/Bridging and Innovation
- To aid the development of an Innovation Tool-Box to Food SME’s involved in the South Baltic Innovation Program

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Introduction

‘The objective of WP5 is to develop a food innovation toolbox available for food innovation especially addressing the generally low innovation capacity in food SMEs’

The aim of this document is to provide a brief overview of the concepts of (in prioritized order): knowledge transfer, knowledge bridging, open innovation, innovation tool-box, innovation models, knowledge collaboration in food systems, critical/alternative perspectives. Because of the still limited research pool specifically investigating Food SMEs both in general and in relation to the main topics of this document, much of the literature referred to in this document is thus, often, studies into SMEs and HEIs on a generic/general level.

It is important to state that this document does not provide an exhaustive overview or review of all innovation models and concepts or associated literature relating to innovation and knowledge transfer/bridging.

The document in relation to the aim of Work-package 5 and SB Innovation

A strong imperative for writing this overview has been to provide relevant participants in the South Baltic Innovation project (SB INNO) with knowledge and perspectives on the above issues and concepts. This document should equip partners and participants to better achieve a shared pool of knowledge that, optimally, should aid their efforts in the planning, implementation and evaluation phases of the SB INNO project and WP5. The document should thus hopefully provide inspiration and initiate discussions for the initial design of an innovation toolbox and/or knowledge bridging platforms, the coming workshops as well as the work of the Food Innovation Council. Lastly, the document should allow its readers to use the presented concepts more strategically for the benefit of SB INNO and their own respective organizations and collaborators.

The document – in line with the overall project – has a focus on European Food SME’s and their cooperation with universities and other knowledge institutions in relation to knowledge transfer, open innovation, toolbox innovation etc. This contextualization, when possible, is done in order to provide the most relevant “implementability” for the participants in SB INNO. The abstract nature of many of the concepts/models is thus tried tempered and explained by the connection to real life (mostly European) case studies and with some, specifically, on more “peripheral regions” as is another dominant trait of many of the (potential) SMEs involved in SB Innovation. But as the document will show these concepts are rarely unambiguous in nature and influenced by a myriad of factors relating to anything from the size of participating companies, level of technology/knowledge being tried transferred and cooperation environment, which again can vary due to different national, regional and even local structures, legislation and market possibilities.

Structure of the document – a reading guide
This document is divided into three parts. The first part will introduce select representative innovation models that also are inclusive of knowledge transfer/bridging elements. These models are then summarized and discussed. The second part presents and discusses some of the data/research into SME/HEI collaborations and KT/KB/Innovation processes, highlighting both opportunities and barriers for such initiatives, and whenever possible relates these findings to food SMEs (in peripheral regions). This second part will also focus on the concepts of “Absorptive Capacities” and “Open Innovation” as these have shown themselves increasingly important throughout the research of this document, and it is believed by the author that increased understanding of both concepts might have beneficial outcomes for the coming activities of WP5 and perhaps SB INNO more generally. The third part will – using the content of the previous two chapters – discuss how participants in WP5 can use the presented models and data/research in order to design, plan and facilitate the next activities in the work-package (SME/HEI networking, food council etc.)

Abbreviations found in this report:

SME: Small and Medium-sized Enterprise  
HEI: Higher Education Institution  
OI: Open Innovation  
KT/KB: Knowledge Transfer/Knowledge-bridging  
SBINNO: South Baltic Innovation

Good to know:

SMEs are divided into three subcategories: micro-enterprises with 10 or less employees, small enterprises with 10–49 employees and medium enterprises with 50–249 employees (EU Commission, 2005). In this document the term SME will not discriminate between the different sizes of SMEs unless it has direct influence on the argumentation.

Executive Summary

What is missing is a decent cookbook, an integrated framework that helps managers to decide when and how to deploy which open innovation practices. In what stage of the innovation process is collaboration most effective? (Huizinga p. 31 2011)

There is a wealth of models concerning innovation processes and knowledge transfer/bridging. Many of these models provide useful tools and guidelines to help design and execute innovation processes generally. However, most of these models also fail to recognise innovation – and thus indirectly knowledge bridging – as a possibly non-linear and, often, idiosyncratic process that rarely can or should be contained within the framework of universal innovations models and delimited participation. Initiating a successful innovative program/process, research suggest, is affected greatly by many factors, for instance size and the absorptive resources of the participating partners, as well as different structural
conditions and traditions specific to particular industries. Although the food sector is by far the largest sector of employment and turn-over in Europe, it also has some of the smallest investments in innovation. Increasingly important aspects of KT/KB and Innovation is the recognition and understanding of SMEs absorptive capabilities often linked to its internal resources - do they even have time/personnel to engage in innovation collaborations? And how can HEIs better help facilitate an innovation process that is relevant to each unique SME and their challenges? The concept of “Open Innovation” might provide some solutions. This document presents and positions the concept of Open Innovation as a possible platform of departure for both the coming work with the innovation toolbox as well as the networking activities and facilitation in work-package 5. But as with much of the literature dedicated to KT/KB and Innovation focus is predominantly on larger corporations and less on SMEs, thus requiring some restraint and modifications when applying these concepts and models on SMEs.

Specific literature on food SMEs and knowledge bridging is few and far between. Add peripheral regions to this equation (as The South Baltic area could be considered amongst) and you are left with not much data or research. Indicating that there is a need to understand, develop and facilitate new forms of knowledge bridging and innovation processes for Food SME’s in such regions and also generally.

When looking more broadly at opportunities and barriers in regards to knowledge transfer/bridging from HEIs to SME’s many factors appear, including: lack of trust, difficulty in translating knowledge, lack of intrinsic knowledge etc. These factors make it obvious that successful innovation seems to require that we re-think and position the processes of knowledge transfer and also its many associated models – or at least that we modify these to our exact context and mission of SB Innovation and WP 5. This could entail moving from a linear one-way process of knowledge transfer (HEIs to SMEs for instance), and instead viewing knowledge bridging and innovation as on-going processes and dialogues that are contextual because they have to work in a “messy world” where models are seldom followed to the letter, and frequently never utilized in the first place. “Business as usual” dominates the European Drink and Food industries, especially the many SMEs. Such dialogical approach is also suggested as beneficial by some of the literature researching larger innovation programs involving SMEs.

On the basis of the presentation and discussion of innovation models, and the data/research on KT/KB/Innovation between HEIs and SMEs, recommendations are put forward that we embrace the complexity of both participants and innovation and encourage the facilitation of dialogue as well as knowledge transfer. Another important aspect moving forward will be to define and acknowledge different ways of perceiving of innovation, distinguishing between position; process; product; and paradigm innovation for instance, in order to bridge the diverse positions and aims of all participants in SB Innovation, and hopefully be able to develop a meaningful and dynamic innovation-toolbox.
PART 1
Models to enhance innovation and knowledge bridging

-Mental models are important because they help us frame the issues which need managing, but therein also lies the risk. If our mental models are limited, then our approach to managing innovation is also likely to be limited (Tidd 2006)

Models to describe innovation as a process is a relatively new phenomenon historically according to Godin (2015) ‘The origin of models of innovation is the study of innovation as a process. Beginning in the 1940s, rural sociologists began theorizing about the diffusion of new practices in farming...Until the 1940s, innovation as a concept was either a substantive (novelty) or a verb (introduction, adoption), an end or a means’

Godin (2015) also eloquently provides tentative answers to why models as a concept – and particularly when it is linked with another associative but hard to define concept as innovation – has become so widely used and accepted as a universal tool: ‘model’ has breadth or high abstraction, wide generality or a variety of definitions, a strongly positive and normative attractiveness in its positive connotation of scientificity, a claim to universality or synthesizing virtue...These are all ingredients that make of it a concept capable of mobilization across scholars as well as across domains, both scientific and public.’

Innovation models and associated toolboxes to aid an innovation process, therefore, has much potential and relevance, not least judging from their popularity and the fact that innovation is considered a cornerstone to success in most businesses today. Their continuous development and re-assessment is therefore of great importance as they increasingly function as guides for businesses and organizations in general in increasingly complex and expanding markets/societies- both geographically and product-wise.

Examples of models
Below are variations on some of the most popular Innovation and knowledge transfer/bridging models.

Firstly, is the simple company-centric model where knowledge is created, developed and evaluated internally by the company.
And, again here a somewhat more specified in relation to the innovation/development phase – albeit still company-centric, closed linear process.

These models are widely used – especially within corporations where there are ample internal resources and a wide and deep breadth of knowledge and personnel available. These are resources that many Food SMEs do not necessarily have in-house, it would therefore make sense to look at models that include a more external/collaborative approach.
Simplified Model of the Innovation Process

Another model is the “Simplified model of the Innovation Process”

**Innovation Process**

This model could also be considered as a closed and partially company centric model. But as is obvious from its stages it also acknowledges possible external possibilities and innovative capabilities that might lie outside of the company itself – allowing for broad innovation searches and capture not necessarily restricted to internal participants. Also, the model is less product focused and more orientated towards innovation more generally - thus perhaps making this model a good “bridge” to more complex representations of innovation processes.

Indeed, if we begin to look at innovation processes as something that can be facilitated by various and external participants as well, the models become slightly more complex. Below is an example from Open Innovation that is “the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively.” (Chessborough 2003)
Open Innovation – Sharing is winning?

In this model the innovation process is open to input from people with relations to, but not infrequently external, to the company. Customers for instance are thus not just seen as potential users or part of a potential target group, but rather utilised actively as valuable co-creators of possible new innovations: 'Consumers share their food-product experiences, and evaluate their appeal, value, acceptance and effectiveness by sharing needs, ideas, feelings, emotions and experiences, and providing feedback. Moreover, they possess a set of value-creation tools, playing the role of co-designers, innovators, marketers or branders (Romero & Molina, 2011). Consumers as co-designers participate in idea generation, conceptualization, continuous design improvements and testing throughout all NPD phases.' (Saguy & Sirotinskaya 2014)

This open approach to innovation and, therefore also knowledge transfer/bridging, requires participants to think of how to facilitate and nourish innovation networks with relevant partners/contributors who might contribute to some parts of the process, but not necessarily be part of the whole journey from conception to execution. Such an approach requires you to imagine innovation processes as contextual, network-based and often non-linear in nature. Innovations can (in theory) appear at any stage of the process, and is continuous, as feedback continuously feeds the innovation loop.

Over the last two decades much attention has been focused on Open Innovation (Chesborough 2003) to explain and help direct more fruitful innovative processes and their development for businesses and beyond. In some ways you could claim that open innovation is closer to a concept like knowledge bridging than knowledge transfer in the traditional sense. Open innovation allows and also requires partners (both commercial and otherwise) to think in
dynamic networks where the innovation process can seem more like a patch-work or bricolage of different contributions and contributors, and whose progression is not necessary linear but more fragmented, and ultimately dependent on the exact resources and ambitions of companies engaging with innovation in this way – generalizability might therefore also be harder to achieve:

‘Chesbrough (2003, 2011) suggests that effective innovation is linked to the firm’s accumulation of knowledge through feedback (Galende 2006) resulting in idiosyncratic innovation capabilities that are difficult to replicate by others.’

(Saguy & Sirotinskaya 2014)

Despite of its more “messy” approach to the innovation process, open innovation actually can require more not less modelling and strategic management of knowledge.

“For successful OI implementation knowledge management strategies are important. Specifically, the development of a systematic framework of knowledge, in spite of an implicit approach, is determinant in order to manage relationships among different actors, and to capitalise on tangible and intangible resources. In particular, knowledge management models are fundamental as the number of actors with whom the company collaborates grows, due to the increasing complexity of the knowledge to be managed.”

(Bigliardi & Galati 2013)

As the figure below illustrates some significant processual differences appear if you start viewing innovation as “open” rather than closed. One of the most significant differences – also in relation to WP5 – is that of managing the openness and the (in theory) endless options of external collaborators in innovation processes. Most companies, large and small, have through-out history engaged in Open Innovation either through chance or as part of on-going conversations with regular suppliers, consumers etc. In that way, Open Innovation is old wine in new bottles. However, open Innovation is not just about staying open to new input, it is about becoming aware and systematising these collaborations, knowing more accurately who can be (the most) beneficial in the various stages of a continuous innovation process. This approach thus demands that you view innovation as part knowledge management or knowledge bridging, as the processes are (in theory) infinite and possibilities endless. Staying open for business is thus, also, about managing and capturing innovative changes through knowledge-bridging partnerships and networks.

**Contrasting Principles of Closed and Open Innovation**

<table>
<thead>
<tr>
<th>Closed Innovation Principles</th>
<th>Open Innovation Principles</th>
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<tbody>
<tr>
<td>The smart people in our field work for us.</td>
<td>Not all of the smart people work for us* so we must find and tap into the knowledge and expertise of bright individuals outside our company.</td>
</tr>
<tr>
<td>To profit from R&amp;D, we must discover, develop and ship it ourselves.</td>
<td>External R&amp;D can create significant value; internal R&amp;D is needed to claim some portion of that value.</td>
</tr>
<tr>
<td>If we discover it ourselves, we will get it to market first.</td>
<td>We don’t have to originate the research in order to profit from it.</td>
</tr>
<tr>
<td>If we are the first to commercialize an innovation, we will win.</td>
<td>Building a better business model is better than getting to market first.</td>
</tr>
<tr>
<td>If we create the most and best ideas in the industry, we will win.</td>
<td>If we make the best use of internal and external ideas, we will win.</td>
</tr>
<tr>
<td>We should control our intellectual property (IP) so that our competitors don’t profit from our ideas.</td>
<td>We should profit from others’ use of our IP, and we should buy others’ IP whenever it advances our own business model.</td>
</tr>
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This aim of this model is to aid knowledge bridging between different partners and in different types of projects (student, research, knowledge etc.). The model has three main stages (similar to most other innovation models) and fourteen neat steps that can aid the process of innovation at any given stage. However well the model tries to bring complexity to the innovation and knowledge bridging processes, it still seems to view innovation as largely a linear and universal process where one step naturally leads to the other. Despite of specifying that different projects require different adoptions of the model, not much data from the “messy real world” seems to be utilized (and only in the most positive of ways), in order to bring the models different stages and steps into play, nor does the report supporting the model, refer back to much specific empirical data (research?) or previous literature, despite of borrowing heavily on previous models. It is doubtful how small and medium-sized (food) SMEs will be able to use this model proactively
in their everyday operations and with a traditional focus on incremental innovations rather than radical innovations. That being said, the model could perhaps, given modifications, be used as a template to engage (food) SMEs, especially since it takes a very contextual and dialogical view of how to engage in innovative collaborations, and where knowledge can flow to both SME and HEI. Taking such an approach is partly substantiated by some research: “Knowledge, and thereby innovative ideas, are co-constructed and reconstructed by organisational members in relational episodes (Gergen 1994). According to this perspective, organisational innovation can be approached as “a joint conversational event where new configurations of meaning are constructed” (Steyaert et al. 1996, p. 67).” (Kocher 2010)

Start-up innovation model – build, measure, learn

Some SMEs – especially micro-enterprises with 10 or less employees – could perhaps also benefit from applying innovation tools originally designed for start-up companies. The model from Ries’ “The Lean Start-up” (2011) provides much useful advice in order to initiate, test, develop (or build, measure, learn) innovation processes and new (innovative) products. The model is made for start-up companies presumed to be without much capital and with few employees (sometimes only the founder), so each step is manageable and affordable for small companies, also the model is very concrete and hands-on in its advice (albeit still generic and widely applicable), which means that SMEs might have an easier time adjusting and understanding this, as point of departure for further external knowledge transfer/bridging and collaboration.
Generic innovation models, however well designed and substantiated by relevant research, still, often, speaks very little about the diverse contexts of where and between whom innovation and knowledge transfer unfolds successfully. There are a wide variety of innovation models that could be a useful tool for many (food) SMEs, but its application seems – according to some literature– highly contingent on many other factors such as internal resources, external collaborations/networks, type and size of company, sector etc. The best of innovation models, are thus very helpful in helping to frame a specific challenge/business into specific parts that can open up the innovative process by creating clarity internally as well as helping to create a “common language” which then can also be shared with external partners and experts, again increasing the likelihood – in theory – that challenges can be addressed in an appropriate, or at least coherent, manner. 

Also, many innovation models only apply a partial, or selected, view of the innovation process, by for instance only focusing on innovation as “breakthrough” changes and thus neglecting the potentials of incremental innovation – please read Tidd (2006) for a more exhaustive overview of innovation models their uses and disuses. Many models of innovation also have a clear innovative bias (everything new and/or more productive is good) and thus often underestimate or completely fail to include social and cultural aspects -GMO foods being an excellent agro-food example hereof. The success of an innovation is – to a large extent, and especially in regards to incremental innovation – contextually dependent.

This context-dependency, however, does not necessarily exclude more general or universal propositions and observations in relation to innovation and knowledge transfer/bridging – but such acknowledgements to their limitations should make us cautious in applying them as predictive models, but rather as models that can help the orientation of the innovation processes and collaborations in a “messy world”, where trust might be more important than knowledge or at least interdependent. Knowledge is often tied in with trust, and such perceptions have real-life implications: “For SMEs, the more "generic" pathways suggest the use of weak ties in the search of useful knowledge, but it is really the "relational" pathways that require more developed stronger ties that will engender higher trust levels and therefore lead to more effective knowledge transfer and ultimately higher innovativeness” (Corral de Zubielqui et al. 2015)

It could, therefore, be advisable to re-interpret the process of knowledge transfer as a one-way flow from universities to companies in a vertical fashion. But rather see the process as a form of “knowledge co-production” (Rossi & Rosli 2017) where both university/ researcher and company/employee are enjoying not just possible mutual pecuniary rewards (if the innovations/knowledge provide better more profitable products and services), but also provide new opportunities for further development and (particularly for involved researchers) new research opportunities and access to key personnel. This, it should be noted, is a development already taking shape around many campuses of HEIs, where closer integration and knowledge co-production between companies (not necessarily SMEs!) and HEIs take place more frequently.

The hypodermic needle “model”
- If only it was that easy!
If only it was that easy!
The hypodermic needle theory might have been disproven many years ago, but it is still influential in how we design and conceptualize solutions—thinking innovation and knowledge as neutral and in singular narratives/aims and with a bias towards innovation as something predominantly technological.
PART 2
Knowledge Transfer/bridging to SMEs – challenges and opportunities for innovation

Food and drink SMEs are the backbone of most economies as the EC statistics in the figure below more than indicate. ‘Europe’s food and drink industry (the largest manufacturing industry in the EU in terms of turnover and employment), is highly fragmented in nature, comprising more than 287,000 companies, the overwhelming majority of which are SMEs (99.1%).’

(EC 2013)

![EU Food and Drink Industry Figures](image)

The imperative for increased innovation is ascribed to some of the structural changes of the last three decades in particularly, here nicely summed up: ‘The FI [Food Industry] faces a large number of typical challenges comprised of instantaneously changing and evolving consumer needs, shortened product life cycles, the competitive time-to-market race, cluttered retail shelf space (Bellairs, 2010) and increasing difficulty in meeting the heterogeneous requirements of a growing number of chain actors (e.g., suppliers, customers, legislators; Sarkar & Costa, 2008). ’ (Saguy & Sirotinskaya 2014)

Despite of their recognised importance not just economically but also culturally and historically, food SME’s are rather overlooked in the literature on innovation processes and
knowledge transfer/bridging. Also, HEIs traditionally play only a minor role in knowledge bridging/transfer to SMEs. The reasons for these are multitude: ‘Hughes et al. (2009) ascribe the very limited role of HEIs as a source of knowledge for SMEs to the fact that they are not (organisationally, professionally or geographically) close to SMEs. They conclude that universities are more "remote" compared with other more proximate sources of advice within SME networks and, moreover, less effective."The main barrier in SMEs academia collaborations is the lack of internal resources. SMEs generally find it difficult to access information and knowledge from HEIs (Deschamps et al., 2013). Even though SMEs may be interested in such collaborations, they find the search and scanning costs for doing so too high and exceedingly challenging to overcome (Howells et al., 2012)’ (Saguy & Sirotinskaya p. 2014)

Other challenges identified to establishing such collaborations are ascribed to conflicting interests: ‘the main focus in academia is on basic research driven by fundamental science and knowledge, whereas industry, in most cases, is driven by maximizing profits. Other issues, such as the need to publish and IP [Intellectual Property] rights are two common examples’ (Saguy & Sirotinskaya 2014)

This deficit of research into SMEs and KT/KB/Innovation could also, partly, be explained by the relatively low-tech approach/production in large parts of the food sector – especially prevalent amongst SMEs. Also, much literature focuses on innovation/technology that “follows the money”, meaning that much research focuses on IT-technologies, Medical Innovations etc. Ensuing models thus often takes it for granted that companies have dedicated resources to pursue and capture innovation both internally and externally. Not surprisingly, most innovation models are primarily utilized and developed in partnership with larger corporations who have the internal resources to integrate and test new innovation measures and methodologies.

It, therefore, seems important to understand the absorptive capacities of participating SMEs, as they may vary considerably – and as noted in the previous chapter also be influenced by personal motivations rather than any economic rational motives often ascribed larger companies. “Fundamentally, absorptive capacity is a function of the prior level of knowledge accumulated by a firm, which subsequently influences its ability to not only acquire and assimilate additional knowledge but also to exploit it” (Galbraith et al. 2017 p. 673)

However, some data/research certainly do exist. In a study with a focus on the food sector and SMEs (Braun & Hadwiger 2011) identifies many different factors to help explain why knowledge transfers and collaborations are, often unsuccessful. It is worth noting, however, that many HEIs already have adopted more dialogical approaches to SME innovation that should alleviate some of these factors; factors that can, also, be exacerbated by the type of innovations being tried developed- please see part 3 for further elaborations.

On the donor side (HEIs), the most common barriers encountered when intending to transfer knowledge are:
• Assumed benefits of possessing knowledge exclusively (Bruneel, D’Este, & Salter, 2010);
• Lack of ability to transfer knowledge to a non-specialist (Quillien & Vidal, 2003);
• Lack of face-to-face contact to industry partner (Bruneel et al., 2010);
• Language and culture barriers (Braun and Hadwiger, 2010; Quillien & Vidal, 2003)

On the side of the receiving entity (SMEs), we can observe the

• Lack of trust (Bruneel et al., 2010; Grunert et al., 2008; Santoro & Gopalakrishnan, 2000);
• Lack of structures for knowledge processing (Santoro & Gopalakrishnan, 2000);
• Lack of knowledge concerning the know-how transfer process (Santoro & Gopalakrishnan, 2000); as well as
• Language and culture barriers (Braun and Hadwiger, 2010; Carayannis et al., 2006; Quillien & Vidal, 2003).

Knowing these factors, it becomes crucial for anyone who wants to engage with SMEs to know more exactly what the needs of food SMEs actually are? What sort of innovation level and (outside) cooperation are they even interested in? (as the Reg Lab report/Model actually also tries to do).

Beneath is a telling quote from a survey conducted among British food SMEs (Baregheh et al. 2012):

“Overall then, firms achieve paradigm innovation largely through incremental changes in their strategy and plans, which they analyse and review. They are reluctant to engage in radical changes to their strategy and business model and show relatively little interest in partnering and alliances” In a Danish context the “GRØ” project (Grønne Regionale Madoplevelser) also showed that many small food SMEs in Region Zealand (Denmark) – even those with great innovative and market potential – had many reservations about growing the size of their company not infrequently invoking personal and professional lifestyle choices as primary reasons. Also, ’some food SMEs do innovate as “isolated islands”’ (Baregheh et al. 2012).

Furthermore the size of the SMEs matters when assessing the abilities to innovate (Freel 2003) and of companies to receive and utilize knowledge from higher education institutions or similar institutions: “it is unhelpful to group all SMEs together. There are important differences between medium, small and micro enterprises, especially in terms of understanding how they collaborate to access knowledge to innovate” (Corral de Zubielqui 2015)

Research has found that SMEs use a variety of channels and “partners” with whom they establish strong or weak ties “smaller firms focus on fewer key innovation partners with whom
they have strong ties (Lowik et al., 2012). This is in line with Hansen’s (1999) findings that showed that while weak ties helped in the search of useful knowledge, it impeded the transfer of complex, more tacit knowledge, which required stronger ties as these engendered higher trust levels.”

There is seemingly also a difference in what sort of relationships are used in different parts of the knowledge/innovation process: “For SMEs, the more “generic” pathways suggest the use of weak ties in the search of useful knowledge, but it is really the “relational” pathways that require more developed stronger ties that will engender higher trust levels and therefore lead to more effective knowledge transfer and ultimately higher innovativeness” (Corral de Zubielqui et al. 2015)

Knowing that strong ties (of trust) is especially important to SMEs Co-location has also been proposed to be a possible influential factor. “Torre and Rallet (2005) suggest that temporary geographical proximity, in the form of temporary geographic co-location, may be sufficient to develop other forms of proximity (e.g. organizational) which then enable collaboration over large geographical distances.” (Corral de Zubielqui et al. 2015)

Initiating Innovation in a program with SMEs – cautionary tales

As the development of the toolbox and Work-package 5 is intimately tied up with the overall program of South Baltic Innovation and associated work-packages it seems pertinent to mention some of the findings relating to similar programs, and the possible pitfalls that can appear between program managers, or leaders, in their collaboration with SMEs. “There remains a lack of systematic research to guide programme designers on how organisational and technological innovation can be effectively implemented in SMEs within peripheral regions (Freel 2000; Klein and Sorra 1996; Scozzi, Garavelli, and Crowston 2005).”

Firstly, it is suggested advisable to confront own understandings of what innovation is and can be, in order not to misalign aims, and to miscalculate the resources of SMEs: “At a policy level knowledge was seen as inextricably linked to R&D (Table 2) thus limiting opportunities for exploring alternative sources of knowledge to overcome innate resource limitations among SMEs.” (Galbraith 2017 p. 684)

This possible misalignment of understandings – between SMEs and project/program leaders can have serious negative influence on both process and ensuing result of the program: “R&D was still viewed as the ultimate expression of innovation with wider innovation viewed merely as the increased applicability of R&D based innovation. This lack of consistency in interpretation between the programme and SME personnel led to disagreements as the programme progressed over time with wider innovation not being sufficiently understood and adequately supported by the Innovplus programme.” (Galbraith et al. 2017 p. 680)

It is therefore encouraged to include, as early on as possible, participating SMEs in the work and design of the program processes: “It is therefore the role of programme policy makers and designers to come together with programme participants in a joint forum to help ensure programmes are fit for purpose” (Galbraith 2017 p. 686)
Open innovation as a possible solution?

Forging these stronger bonds, we might again look to the concept of “open Innovation” for assistance.
In the paper “Challenges in exploiting open innovation’s full potential in the food industry with a focus on small and medium enterprises (SMEs)” Saguy (2014) argues for the concept of “radical openness”: ‘providing a foundation built on four pillars: collaboration, transparency, sharing and empowerment’ when setting up (open) innovation networks.
However useful an “Open Innovation” approach to innovation as well as KT/KB still faces some limitations, and these resemble those we can also detect in the more closed/traditional innovation models approaches:
‘SMEs and many traditional sectors are struggling with its [OI] implementation due to their limitations and numerous real or perceived barriers, e.g., a relatively low absorptive capacity (Spithoven, Clarysse, & Knockaert, 2010), a low capability of managing perceived challenges (Larsen & Lewis, 2007; Rahman & Ramos, 2010; van de Vrade et al., 2009), a lack of adequate collaboration (Lee et al., 2010), limited financial resources for internal R&D, inadequate human resources and competencies, an absence of production facilities, modest market power, lower “status” as an innovation partner, restrictions in securing IP (Deschamps, Macedo, & Eve-Levesque, 2013), and a narrow business portfolio and knowledge base (Bianchi et al., 2010).’

Despite of these challenges it is recognised that: “firms who are more open to external sources or search channels are more likely to have a higher level of innovative performance”
(Laursen & Salter 2014)

The imperative for increased innovation, and therefore also KT/KB, among Food SMEs certainly exist, but this imperative to innovate seems restrained by a multitude of factors both internal to SMEs and external societal/market structures and culture/tradition.
PART 3 Discussion of findings in relation to the coming work in WP5

What is innovation?

“Knowledge, and thereby innovative ideas, are co-constructed and reconstructed by organisational members in relational episodes (Gergen 1994). According to this perspective, organisational innovation can be approached as “a joint conversational event where new configurations of meaning are constructed” (Steyaert et al. 1996, p. 67).” (Kocher 2010)

As indicated from the included data/research in this document Innovation along with KT/KB can be very broad concepts whose success is dependent on many factors. But before you can even start measuring if something is a success, it is important to agree or acknowledge what the criteria of success are and how these are linked to different types of innovation.

Francis and Bessant (2005) identifies four types of innovation:
1. position;
2. process;
3. product; and
4. paradigm innovation.
These are defined, thus (Bessant and Tidd, 2007, p. 13):

Product innovation, changes in the things (products/services) which an organisation offers.

Process innovation, changes in the way in which things (products/services) are created and delivered.

Position innovation, changes in the context in which products/services are introduced.

Paradigm Innovation, changes in the underlying mental models which frame what the organisation does.’

Moving on with WP5 it seems expedient that we can agree on what actually constitutes an innovative process and meaningful results for all partners both SMEs and HEIs. Knowledge bridging, or knowledge co-production as it is also sometimes called, often produces intangible changes in the thoughts and attitudes governing individual and group behaviours, rather than tangible outputs: ‘It might not have had like a really kind of tangible quantifiable impact at all... We may be opened their minds a little bit to a different way of working, different approaches. They certainly got to claim that they were working in a different way’. (Rossi & Rosli 2017)

In regards to WP5 it can, therefore, seem expedient that we acknowledge that changes in the mind-sets of participating SMEs (and HEIs for that matter) are valuable goals besides the more tangible possible products or changes to production/marketing occurring. Including
and acknowledging that changes to positional and paradigmatic innovative processes are also important and part of a continuous process, we will then have to view innovative processes as not necessarily terminated at the end of a development-cycle for a new product, but rather continually renewed and re-initiated as participants more easily can “cross boundaries and structures” (be these in a SME or HEI). Providing relevant tools to facilitate “bridging” aims and knowledge through continuous dialogue and collaboration, therefore, seems expedient.

Questions for the coming work in WP5

On one hand research indicates that SMEs are not very likely to engage in innovation processes – and rarely with HEIs – due to many restraining factors revealed in Part 2. However, it is also more than suggested that SMEs need to innovate in order to stay in business and potentially grow, and that SMEs who do engage in innovation processes can benefit greatly – albeit program lead innovation schemes (similar to SB INNO) can have its own inherent challenges.

We are therefore left with an area of development that is challenging because it is not much researched- especially if you include the peripheral location as well. Also, much literature into innovation (broadly) derives data from second-hand sources (statistics in particularly), and the research is often quantitatively in nature, which often provides overviews and general insights to “how” companies/institutions engage in (open) innovation on a macro-scale but less on the “why” or “how” on the micro-scale – especially considering SMEs. What actually happens in a specific company with specific customers, suppliers, markets, employees etc.? Kim (2011) does provide a fascinating – albeit possibly hard to reproduce example – of how open innovation, for instance, can be initiated, maintained and developed using the famous restaurant “Chez Panisse” and its associated networks (suppliers, customers, staff etc.) as a case-study.

These challenges – viewed more positively - also make the coming process more interesting than had SB INNO engaged in a more research saturated area (focusing on larger corporations instead of SMEs for instance).

Below are some questions and suggestions that – on the basis of the presented data – might help initiative and guide a point of departure for the coming work.

- How best to design knowledge-bridging-networks between HEIs and SMEs? (If not all SMEs are similar should we create networks to facilitate different scales – and how?)
- If we accept the premise that knowledge transfer and innovation processes are highly socially constructed and contextualised concepts - how then to design general/generic models or toolboxes?
- What “tools” both social and more technical can all partners (SMEs, HEIs etc.) agree on as necessary for successful knowledge bridging and innovative utilization of this knowledge?
- If relevant and successful knowledge transfer seems highly dependent on SMEs internal absorptive capabilities (are they actually able to retain, utilize and commercialise new knowledge innovatively – do they have internal resources/employees for such knowledge management?) How do we find out the different levels of absorptive capabilities?
- Do we need to create tools for every significant step in the innovation process? Or should the innovation process rather be seen as a space for experimentation and documentation that can feed into the development of the toolbox? Or both?
- How do we measure innovation and its progress?
- What is knowledge transfer? Are we “only” giving SMEs knowledge (technical for instance) or are we also aiming to change how they view knowledge, innovation and thus rather become facilitators of “open innovation”?

Suggestions for the coming work in WP5 and Tool-box Innovation:

- Identify pool of participating SMEs and initiate a brief survey that identifies what sort of SMEs they are in relation to size (micro, small or medium enterprises?)
- Identify their main products/services, ambitions to innovate, grow and collaborate with HEIs and other relevant partners in the SB Inno program – what sort of collaboration are they primarily interested in?

- Identify their internal resources for participation/sharing and in general get an idea of their absorptive capacities in order to design the most appropriate activities and innovation tools moving forward.

- Identify, prioritize and agree on what forms of innovation WP 5 is interested in developing in relation to Francis and Bessant (2005) four types of innovation.

An important part of the WP 5 is to coordinate and develop the Innovation tool box. As demonstrated in this report, there are already many models for innovation, and suggestions for working processes available. However, some gaps in the existing tools can be seen. To provide a toolbox that goes beyond existing models, the following principles are recommended.

- Build a tool box that encourage open innovation based on knowledge exchange
- The knowledge exchange should be built on real stories from actual SMEs, rather than abstract theories. First-hand knowledge from qualitative data can add something to the abundance of second hand knowledge from quantitative data.
- The tool should preferably have an inter active component, where the cases are not only demonstrated, but also constantly developed by the users of the toolbox.
- The tool box should take into account differences between actors in the innovation system, not least cultural differences.
- Allow space for the demonstration of intangible changes in the thoughts and attitudes governing individual and group as results from the knowledge bridging, and not only for tangible outputs, such as new products.
- Acknowledge the potential mismatch between SMEs and project/program leaders understanding of innovation. Allow space for both sides of the story.
References and Appendices


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