

IIT Deliverable

D3.4 Web Validation Survey Findings

Grant Agreement number	649351
Action Acronym	IIT
Action Title	Industrial Innovation in Transition
Funding Scheme	H2020 RIS / EURO-2-2014
Version date of the Annex I against which the assessment will be made	19 th October 2016
Start date of the project	1 st February 2015
Due date of the deliverable	31 st June 2017
Actual date of submission	14 th July 2017
Lead beneficiary for the deliverable	UNIMAN
Dissemination level of the deliverable	Public

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This document has been produced in context of the IIT project which is part of European Community's Horizon 2020 Programme. For avoidance of all doubts, the European Commission has no liability in respect of this document which is merely representing the authors' view.



This project has received funding from *the European Union's Horizon 2020 research and innovation programme* under grant agreement No 649351

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Abstract
<p>Whereas the aim of T3.3 (Case Studies) is to deepen the understanding of the innovation practices identified during the company interviews, the aim of the web survey is to validate the generalizability of the interview findings. The methodology of the web survey was devised as part of T2.2 (Methodology for Company Interviews). The survey covered the same topics as the interview guideline, but tested hypotheses that were derived during the analysis of the interview data (see D2.4 for a summary).</p> <p>The survey data will supplement the publicly accessible database of findings.</p>

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1 Introduction

The web survey was used as a tool to validate the findings and hypotheses from the qualitative interviews (see Deliverable 2.4) and case studies (Deliverable 3.3). It therefore helped to further widen the respondent base and contribute to data triangulation. The survey did not collect further explorative data or create generalizable findings. The respondents were asked, in their position as experts of their company's innovation activities and business environment, to assess hypotheses that were derived from the qualitative interviews.

Each section of the interview guideline contained 5 to 8 hypotheses, formulated in a way that companies did not have to assess their own working methods/activities, but more at the business environment they are operating in. Therefore, they were asked how they would assess their own business environment and the behaviour of their competitors and other external stakeholders in relation to strategies, trends and new developments in innovation activities (see the full survey in the **Error! Reference source not found.**, '**Error! Reference source not found.**').

The survey comprised five sections:

1. Innovation strategy: The hypotheses tested the concept of innovation strategies and asked the respondents to assess if companies in their business environment organize their innovation strategy mainly around customer needs or future technological advances. They further tested how these strategies are pursued: (1) through open innovation activities, (2) through buying-in new and promising start-ups with highly innovative technologies or (3) by establishing autonomous organizational units for the development of more radical innovations.

2. Changes in business environment: From the qualitative interviews we learned that companies prepare for changes in their business environment by regularly screening the market and the business environment; by co-operating with external partners and stakeholders; by investing more into internal R&D or establishing broad and diversified product portfolios. In the web survey we asked the respondents to assess how companies in their business environment deal with changes in that environment.

3. Foresight activities: Most of the companies interviewed regularly screen the market and business environment. However, the information collected on foresight activities and collective foresight activities was less satisfying¹. Subsequently, the web survey asked the respondents if companies in their business environment tend to conduct foresight activities for innovation planning and strategising. If they answered with 'yes', it further asked if they rely on contributions from external stakeholders for foresight activities. If they answered with 'no', they were asked, what they think are reasons for short-term innovation planning and strategising in their business environment. In this sense, the web survey did not collect further explorative data, but assisted in clarifying our findings and creating a stable data foundation.

4. Innovation Ecosystem: The qualitative interviews showed companies tend to engage more intensively with external actors in their business environment than a few years ago. This is mainly due to the increasingly fast moving digitalisation process and the fragmentation of the innovation process. The web survey tested

¹ This was due to different reasons. The time of the interviews was very limited and not always all questions could be asked; or the interviewee did not have the necessary information on mapping, screening and foresight activities.

this trend further by trying to interrogate which type of is external partners/stakeholders are most frequently involved in the innovation activities of companies, and if companies more often utilise long-term and trusted partners or engage with a wide variety of external partners for innovation.

5. Limitations to innovation and innovation policy: Companies face different limitations in their innovation activities. The web survey asked the respondents to assess different limitations in the innovation activities of companies in their business environment. These limitations were also the centre of focus in the qualitative interviews. Connected to the assessment of limitation in innovation, the web survey further asked the respondents to indicate how relevant certain innovation policies are for their innovation activities.

The web survey was sent out by an institute renowned in Austria, but supposedly less familiar in other countries. This might be an explanation of the strong bias towards Austria (see Characteristics of respondents,

Figure 1). Hence, we decided to forego analysing the web survey data by country. However, we did not find it problematic to analyse the data by company size and sector as we found from our qualitative interviews huge similarities in company size and sectors across the 11 countries studied. It has to be noted though, that due to the number of total responses (376), the number of respondents per sector or company size might be not statistically significant to prove clear differences between company sizes or sectors, but still can be seen as an indication.

Please note: the source of all figures and tables provided within this document is the IIT web survey.

2. Characteristics of respondents

The web survey was sent to the interviewees of the qualitative interviews of all 11 countries analysed in the study, and a sample of approximately 9.450 additional innovative companies in Austria, Finland, Germany, the Netherlands, Spain and the United Kingdom, who did not participate in the qualitative interviews. Table 1 summarizes the survey returns:

Table 1: Assessment of the survey returns

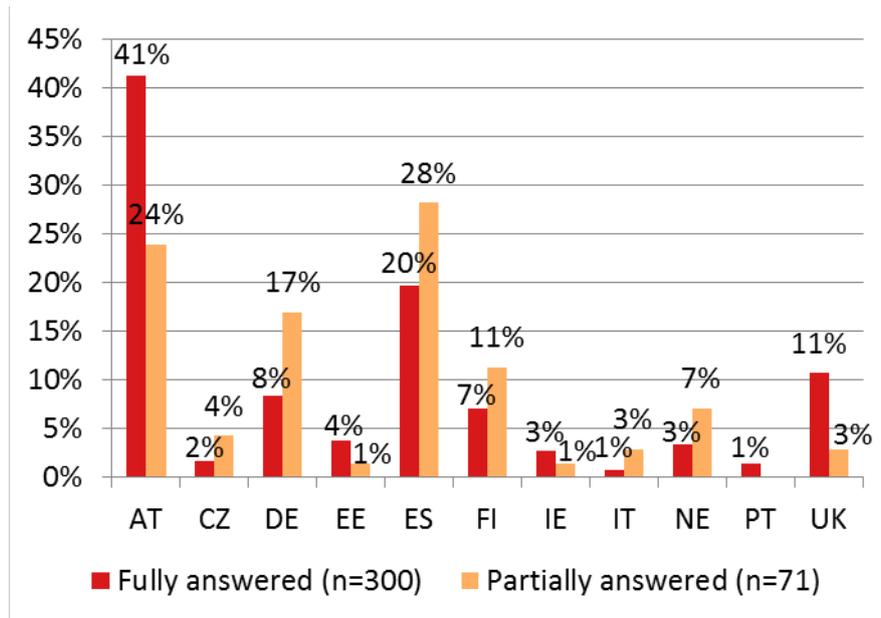
Web Survey	Sample*	Returned surveys*	Un-delivered	Do not want to* participate	Overall response rate**
Qualitative interviewees	694	88	-	3	4,1%
Additional web-survey interviewees	Approximately 9.450	288	1.023	40	

*For Austria, Germany, the Netherlands and the United Kingdom a personalized survey link were sent directly to CEOs, CTOs and responsible persons for R&D, whereas in Finland a different channel was used to address companies. In Finland industrial associations have been asked to further distribute a generic survey link to their company partners. Therefore, the exact numbers outlined in the above table might vary a bit.

**For the calculation of the response rate e-mails which could not be delivered and respondents who explicitly did not want to take part in the web survey were excluded from the overall sample. Partially completed surveys were processed appropriately.

Most of the respondents were from Austria (fully answered: 41%; partially answered: 24%), followed by Spain (fully answered: 20%; partially answered: 28%) and Germany (fully answered: 8%; partially answered: 17%). Only a few respondents from Ireland, Italian and Portugal completed the survey.

Figure 1: Respondents by country



Respondents came from different company sizes (micro, small, medium-sized, large and very large) (left had graphic in Figure 2) and the 5 sectors² used in the qualitative interviews. However, the survey offered the respondents an option ('Other') in case they did not self-identify as one of the 5 sectors. Almost half were from the manufacturing sector (49%), followed by the ICT sector (18%) (Figure 2).

² Agro-Food, Bio-Pharmaceutical, Clean-Technology, ICT and Manufacturing.

Figure 2: Respondents by company size (n=341)

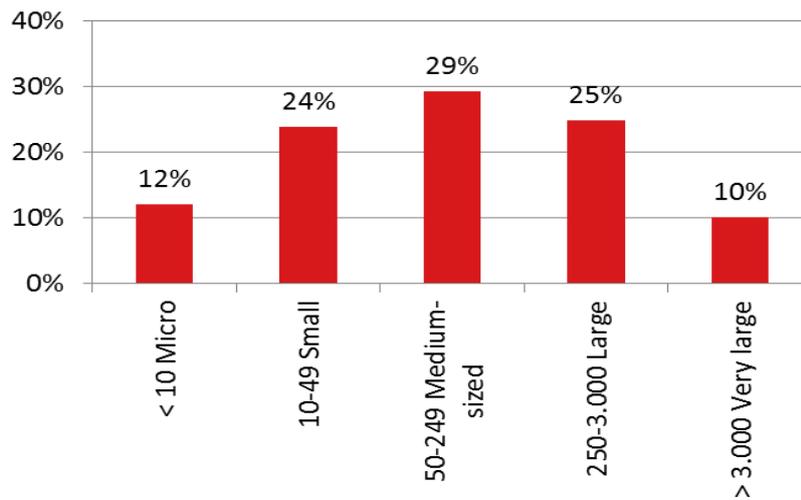
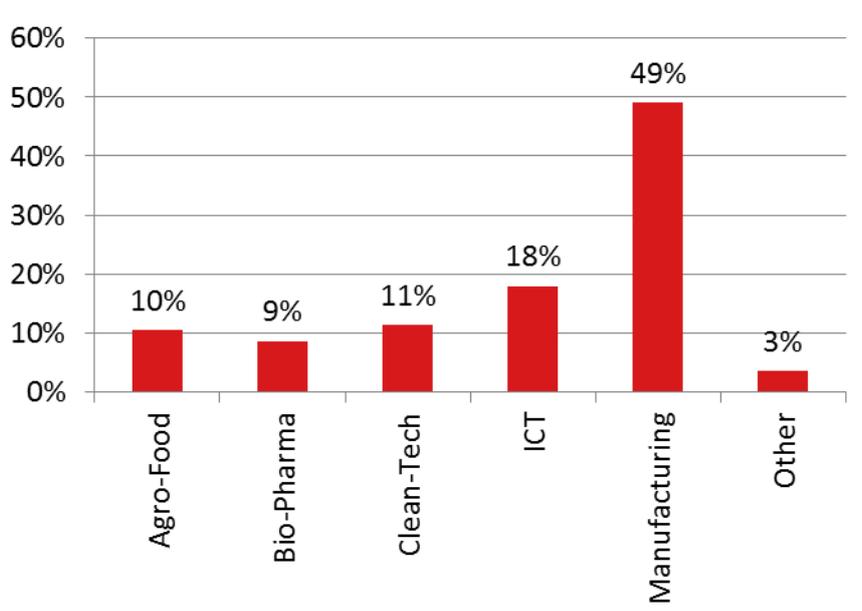


Figure 3: Respondents by sector (n=376)



The majority of respondents came from independent companies (44%). But still 28% of the respondents were head offices and 22% subsidiaries of company groups (see Figure 4). Unsurprisingly, over half of respondents came from companies operating in both national/domestic and international markets (58%). 31% operate only on the international and 11% only on the national/domestic market (Figure 4).

Figure 4: Respondents by company type (n=340)

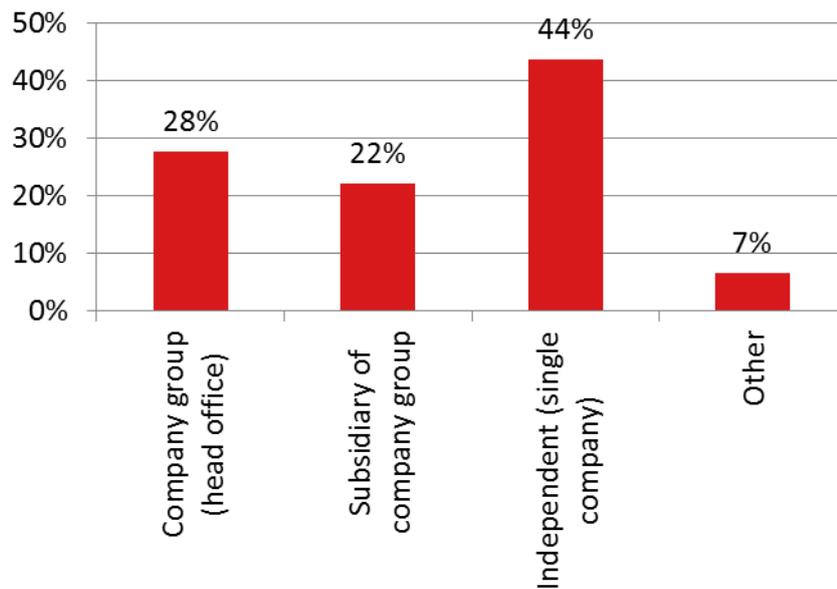
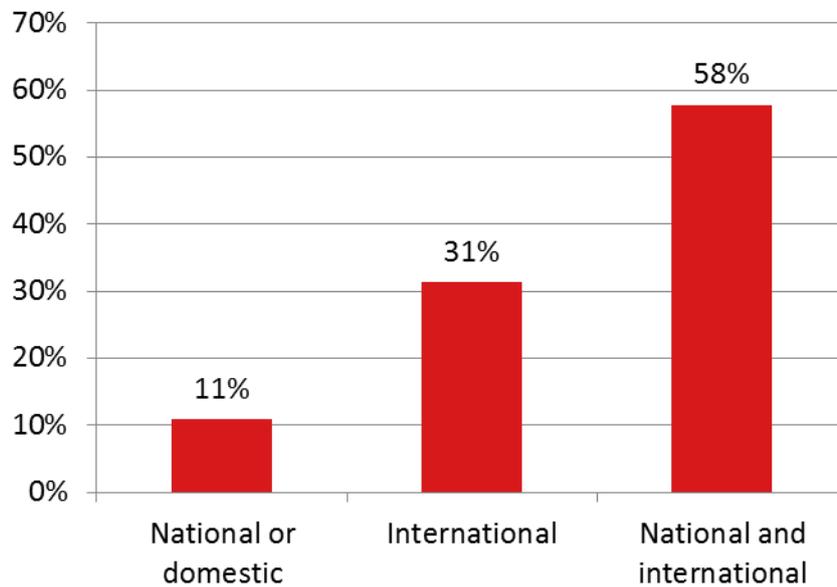
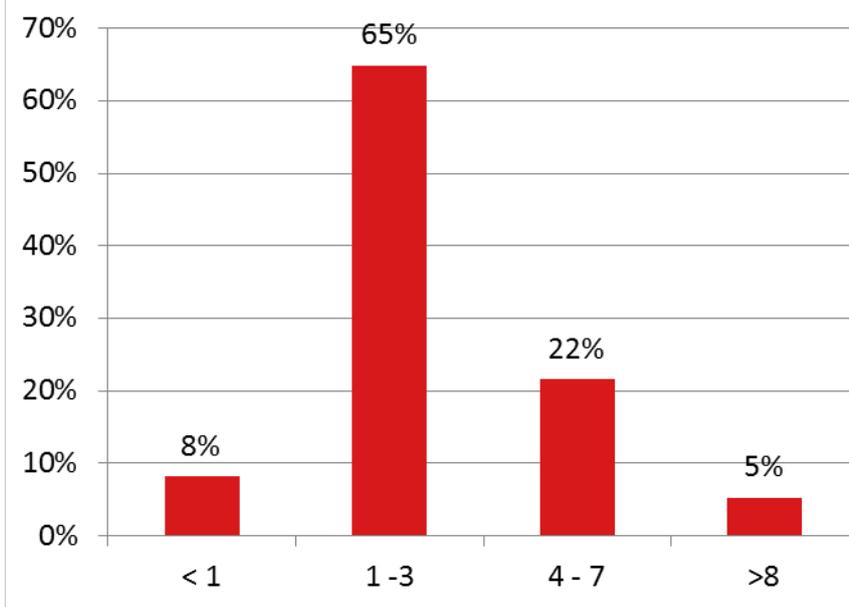


Figure 5: Respondents by market orientation (n=341)



Concerning the typical time horizon of an innovation project, most companies (65%) indicated that it takes 1 to 3 years to bring a new product to the market. 8% operate in very fast moving environments, where a typical innovation project is finished in less than one year, and another 5% operate in slow moving environments, where a typical innovation project takes up to 8 years (see Figure 6).

Figure 6: Respondents by time horizon of a typical innovation project (n=342)



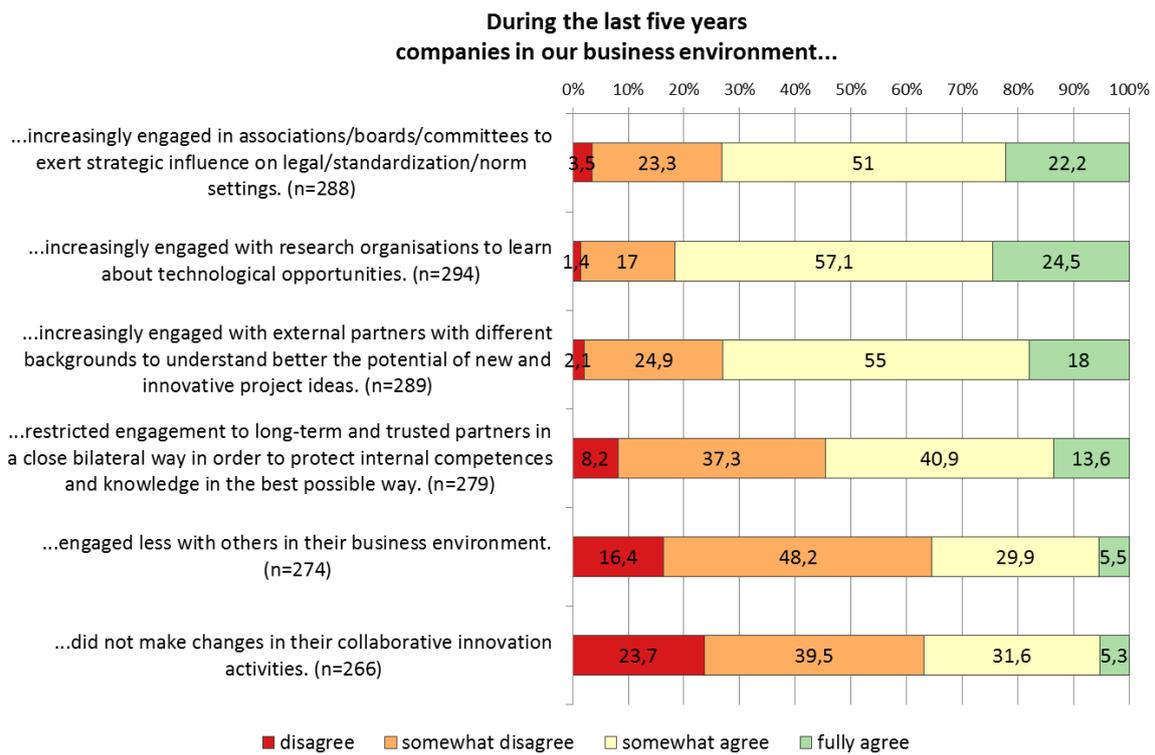
3. Managing Innovation in Innovation Ecosystems

The qualitative interviews had a strong focus on the innovation ecosystems³, how they are established and how companies build their business and innovation strategies around them. The web survey further refined our understanding of these systems, and tried to differentiate the ecosystem partners/stakeholders most frequently used as innovation partners and collaborators. The respondents were asked to assess if they agree that during the last five years companies in their business environment: (1) increasingly engaged in associations/boards/committees; (2) increasingly engaged with research organisations; (3) increasingly engaged with external partners with different backgrounds; (4) restricted engagement to long-term and trusted partners in a close bilateral way; (5) engaged less with others in their business environment and (6) did not make changes in their collaborative innovation activities.

More than half of respondents believe companies in their business environment made changes in their collaborative innovation activities in the last five years (63,2%) and engage more with others in their business environment (64,6%) (Figure 7). This result strengthens the qualitative interview findings, which showed companies engage in a large variety of external innovation interactions to understand current and future innovation trajectories, fill knowledge gaps related to complex customer, technological, and regulatory requirements, and to optimize value creation and capture.

³The Innovation Ecosystem (IES) perspective models complex dynamics around a product or technology based on flows of resources such as knowledge, capital, humans and materials. IES are defined as "...collaborative arrangements through which firms combine their individual offerings into a coherent, customer facing solution [...] When they work, ecosystems allow firms to create value that no single firm could have created alone." (Adner, R. 2006, Match Your Innovation Strategy to Your Innovation Ecosystem, Harvard Business Review, p. 98 ff.)

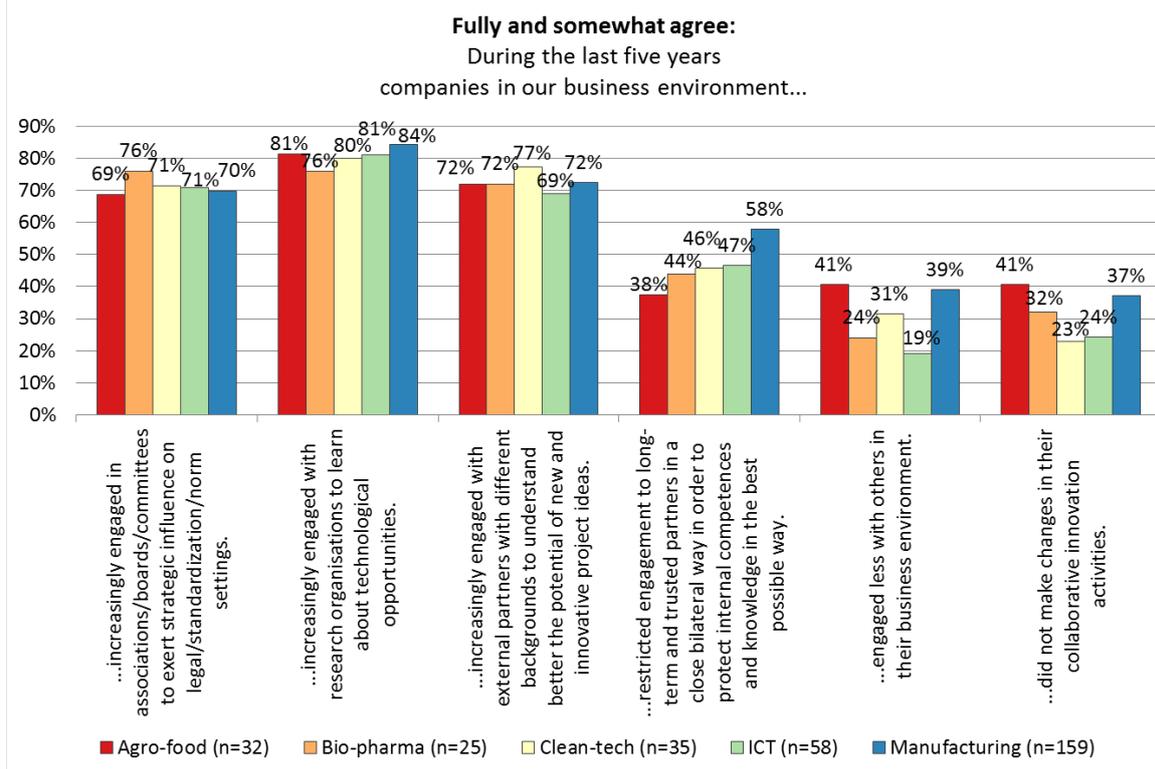
Figure 7: Involvement of external partners and stakeholders



Approximately 73,2% of all respondents indicated that engagement with external partners and stakeholders actually increased among companies in their business environment in one way or another in the last five years. Companies engage with external partners with different backgrounds to better understand the potential of new and innovative project ideas: they interact with research organizations to learn about technological opportunities (81,6%) and see the engagement in associations/boards/committees as an important means for exerting strategic influence on legal/standardization/norms (73%) (Figure 7). This finding confirms that companies use their innovation environment as source of knowledge and competences, and try to shape its evolution by communicating their (future) needs to policy makers and regulators or developing a common vision of the future with other actors.

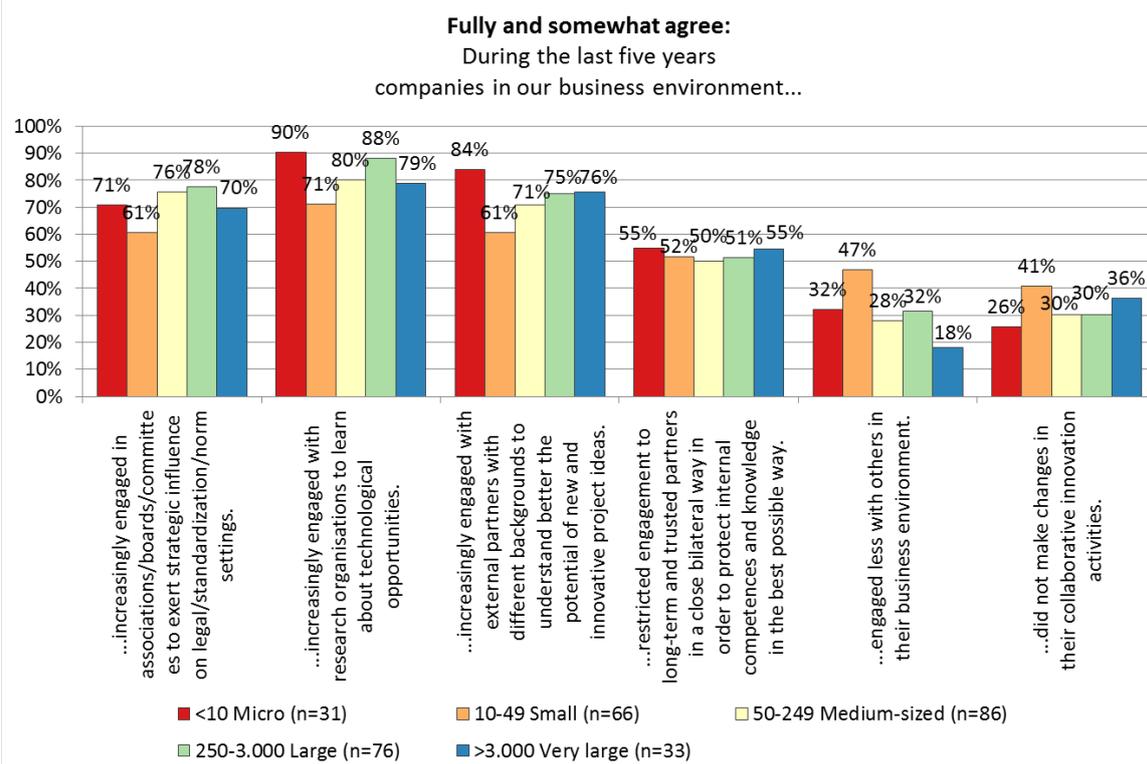
Figure 8 might be an indication for sectoral differences regarding trends in the involvement of external partners and stakeholders. The traditional manufacturing sector is more ‘conservative’ and very customer orientated, making long-term and trusted partnerships in close bilateral forms an important part of innovation in order to protect internal competences and knowledge. Consequently, 58% of respondents from manufacturing companies believe companies in their business environment restrict their engagement to close and bilateral cooperation. 39% also think that cooperation with external partners decreased in their business environment during the last five years - or at least no considerable changes in collaborative innovation activities are recognizable (37%). A similar pattern holds for agro-food companies.

Figure 8: Involvement of external partners and stakeholders by sector



The results highlight also the importance of the innovation ecosystem for micro companies (<10 employees), especially to learn about technological opportunities and to better understand the potential of new and innovative project ideas. This is understandable because a relevant number of these micro companies are start-ups with a high motivation to enter into an innovation ecosystems. In contrast, small companies (10-49 employees) have less motivation to do so, probably because they see themselves enough well positioned in the ecosystem / they feel comfortable as technological followers (see Figure 9).

Figure 9: Involvement of external partners and stakeholders by sector



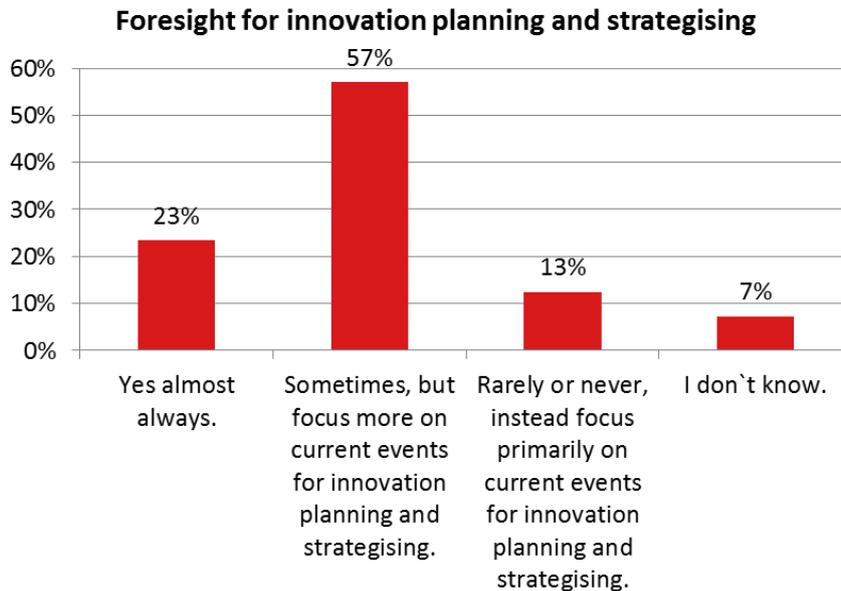
4. Mapping the (future) innovation environment

The qualitative interviews provided us with rich data on how companies regularly screen their market and business environment and which parts of their business environment they screen. The web survey went one step further and collected additional information on individual and collective foresight activities. Therefore, the web survey asked the respondents if companies in their business environment tend to conduct foresight activities for innovation planning and strategising and, if they do so, whether they do it together with external partners or on their own. Additionally, they were asked to assess possible reasons for short-term innovation planning and strategising in their business environment, such as: (1) Orientation with client needs and their concrete requests; (2) lack of skills to use collected data for future product development; (3) lack of internal resources to conduct long-term foresight activities and (4) long term foresight is not regarded as helpful for strategic planning.

As organising innovation activities becomes increasingly complex, the time horizon for innovations is decreasing in many industries as the speed of knowledge production and communication accelerates. Innovations are increasingly the result of inter-organisational collaboration in an ecosystem. Subsequently, the need to understand and monitor external events has increased significantly. 73,3% of respondents fully agree that companies in their industry regularly screen the market and their business environment to analyse and manage change (see Figure 13 in section “Dealing with changes in the business environment”).

Additionally, half of all respondents indicated that companies in their business environment not only screen the market and business environment on a short-term basis, but also conduct foresight activities, which are common practice for 23% of respondents (for certain innovation planning and strategizing activities). Respondents from bio-pharmaceutical companies indicated foresight was particularly prevalent. When considering their competitors, 20% of companies believe their combatants (i.e. competitors and other stakeholders in the business environment) almost always involve external partners in strategic foresight, whilst 61% believe that competitors involve external stakeholders in analysis certain problems/issues.

Figure 10: Foresight for innovation planning and strategising (n=258)



The main reason for short-term innovation planning and strategizing is orientation with client needs and concrete requests. Therefore, they mainly focus on *current* trends and needs (59,5% fully agree and 37,7% somewhat agree). The short term focus is also the result of a lack of capacity to conduct long-term foresight activities (35% fully agree; 45,9 agree) (see Figure 11).

Figure 11: Reasons for short-term innovation planning

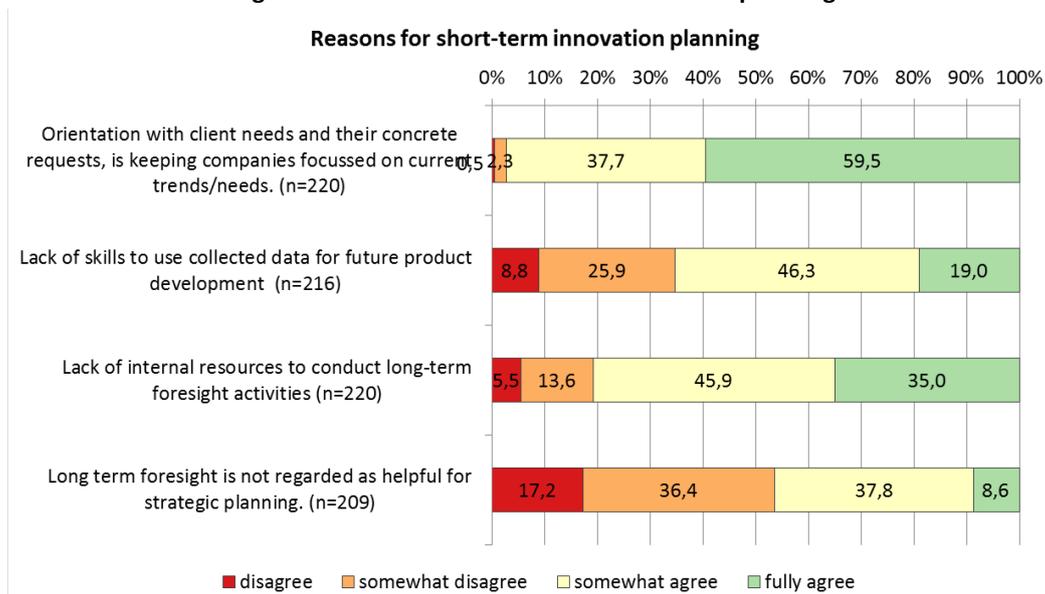
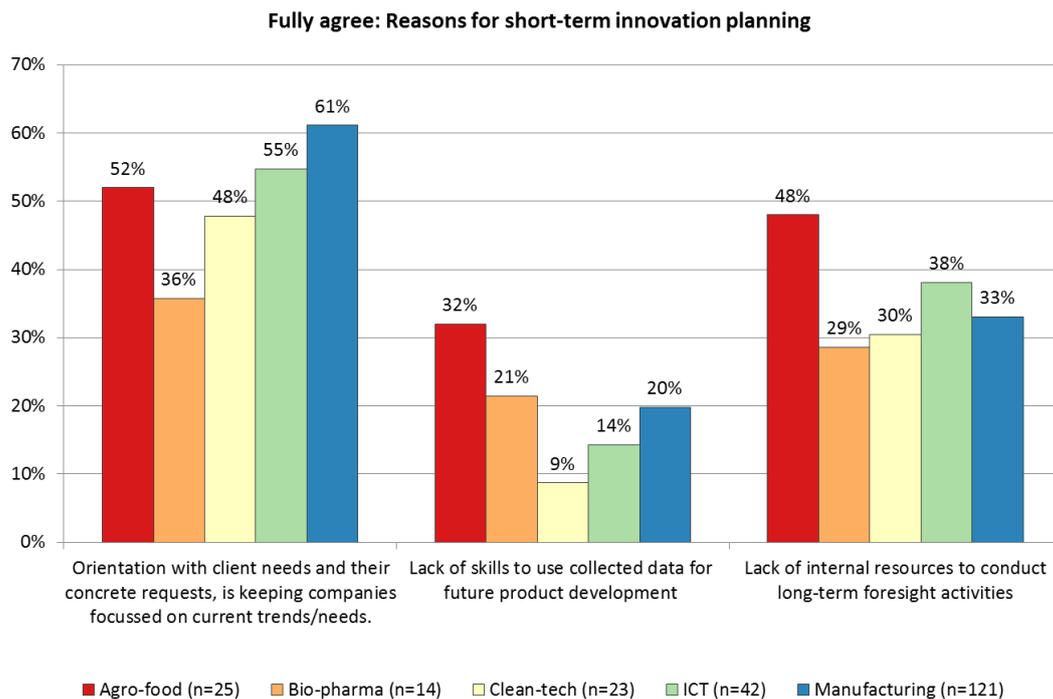


Figure 12 confirms that manufacturing companies orientate their innovation activities with client needs and concrete requests (61% fully agree), meaning their innovation horizon is more focused on current trends/needs as opposed to future game-changing technologies or structural demand issues. Agro-food companies are more likely to experience a lack of internal resources to conduct long-term foresight activities (48%) and a lack of skills to use collected data for future product development (32%).

Figure 12: Reasons for short-term innovation planning by sector



5. Dealing with changes in the business environment

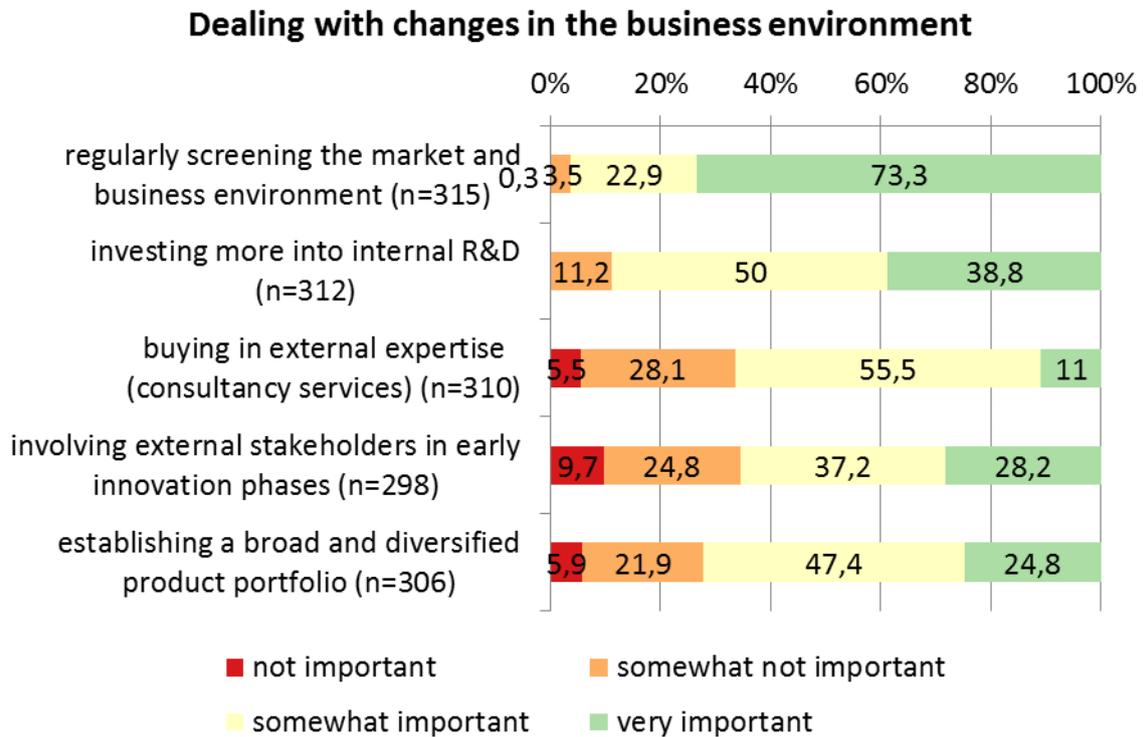
From the qualitative interviews we learned that companies use different methods to prepare for changes in their business environment (e.g. regularly screening the market and the business environment; co-operating with external partners and stakeholders etc.). In the web survey we asked the respondents if they believe that companies in their business environment regard the following actions as important to deal with changes in that environment: (1) regularly screening the market and business environment; (2) investing more into internal R&D; (3) buying in external expertise; (4) involving external stakeholders in early innovation phases; (5) establishing a broad and diversified product portfolio.

These changes influence the innovation planning and strategizing of companies. Therefore, the respondents were also asked to assess if companies in their business environment organize their innovation strategy mainly around customer needs or future technological advances. They further tested how these strategies are perused: (1) through open innovation activities, (2) through buying-in of new and promising start-ups with highly innovative technologies or (3) through the establishment of autonomous organizational units for the development of more radical innovations.

Screening the market and the business environment regularly allows companies to constantly adapt their business and innovation strategies to changes in their business environment. Responses in Figure 13 shows that beside regularly screening the market and business environment, other strategies reported for managing change include investing more in internal R&D (88,8%); buying in external expertise or involve external stakeholders in early innovation phases (66,5%), and establishing a broad and diversified product portfolio (72,2%).

Very large companies in particular those >3.000 employees involve external stakeholders in early innovation phases to carefully consider and manage market trends and changes (52% of very large companies). In contrast, micro companies (<10 employees) find it harder to deal with changes in their business environment by any of these means: establishing a broad and diversified product portfolio (19%), buying in external expertise (8%), involving external stakeholders in early innovation phases (19%) due to a general lack of resources.

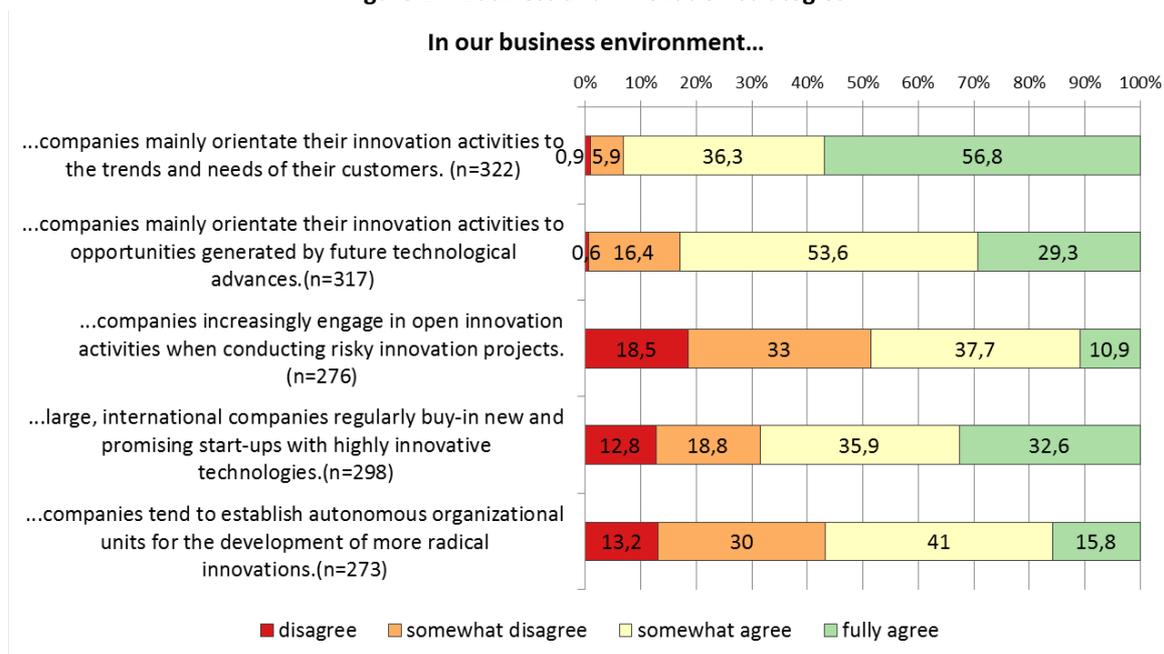
Figure 13: Dealing with changes in the business environment



Manufacturing (39%) and agro-food (44%) companies find it very important use increased investment in internal R&D as a means of establishing a stable position in response to a changing environment; whereas agro-food (very important: 28%), bio-pharmaceutical (very important: 32%) and manufacturing companies (very important: 29%) try to deal with changes in their business environment by establishing a broad and diversified product portfolio.

Another way to deal with changes in the business environment is the adaption and the usage of new management systems and organizational arrangements. These include, for example, setting up specific innovation boards or independent innovation units as well as involving the customer to the innovation process as early as possible. The web survey certified the results from the qualitative interviews, with 56,8% of respondents fully agreeing, and 36,3% of all respondents somewhat agreeing, that companies in their business environment orientate their innovation activities to the trends and needs of customers. This view was especially shared by respondents from the agro-food (fully agree: 66%) and manufacturing companies (fully agree: 62%). Orientation towards opportunities generated by future technological advances is also a common innovation strategy for companies of all sizes and sectors (fully agree: 29,3%; somewhat agree: 53,6%). This is true especially for micro and small companies (micro firms fully agree: 43%; small firms fully agree: 37%) and in the sectors ICT and clean-technology (ICT fully agree: 40%; clean-technology fully agree: 45%). Open innovation was used for higher risk innovation projects by half of the respondents, whilst the half disagree that companies in their business environment follow this trend.

Figure 14: Business and innovation strategies



A considerable share of micro and small firms, which answered the web survey, perceive companies – especially large companies – in their business environment as possible opportunity to increase profit and production capacity by merging with them. From the literature we know that micro-companies in particular, may be established as start-ups with the explicit aim of being bought by a larger company⁴. 43% of all micro and 37% of all small firms fully agree that large, international companies in their business environment regularly buy-in new and promising start-ups with highly innovative technologies; whereas 19% of large and 25% of very large companies believe the same (see Appendix, Business and innovation strategy, Table 9). From a sectorial view, mainly bio-pharmaceutical (fully agree: 59%) and ICT (fully agree: 48%) companies experience that large, international companies in their business environment regularly buy-in new and promising start-ups with highly innovative technologies (see Appendix, Business and innovation strategy, Table 10). This is a common practice in these sectors. From the qualitative interviews bio-pharmaceutical companies reported, that in the recent years there is clear evidence that the innovation process in the pharmaceutical R&D changed considerably. Big pharma companies are widening the scope of their R&D more and more to the outside sources, meaning that they buy in bio-technology start-ups with promising and new technologies or co-operate with them.

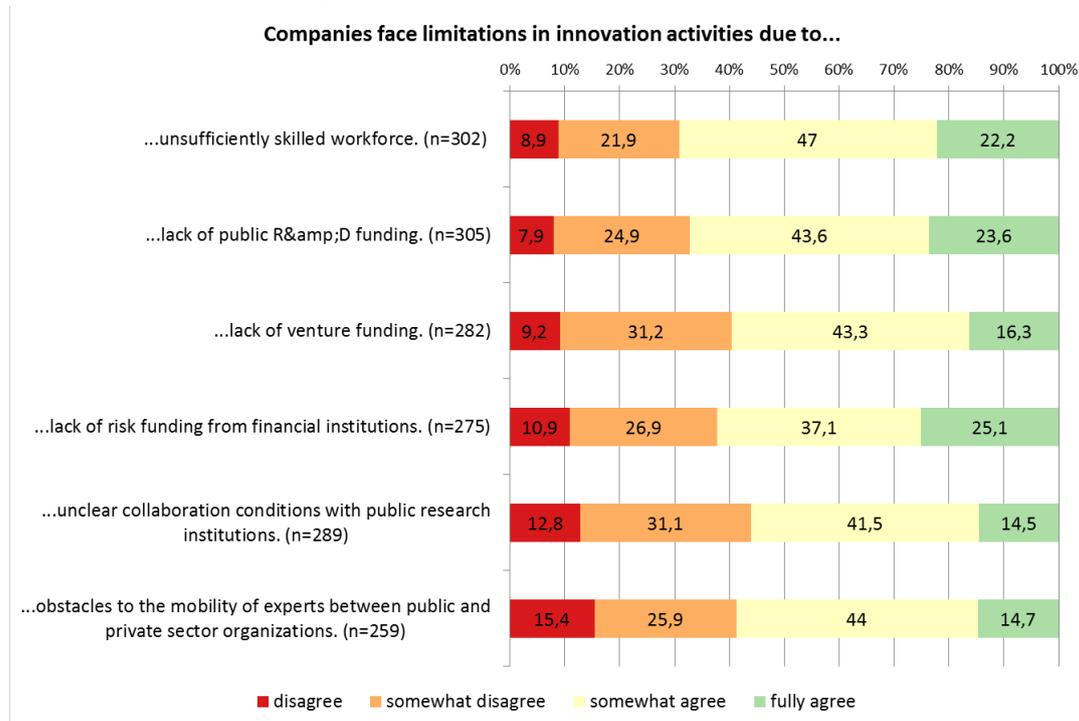
6. Limitations in innovation and innovation policy

The web survey asked the respondents to assess different limitations in the innovation activities of companies in their business environment. The limitations were the following: 1) insufficiently skilled workforce; 2) lack of public R&D funding; 3) lack of venture-capital funding; 4) lack of risk funding from financial institutions; unclear collaboration conditions with public research institutions and 6) obstacles to the mobility of experts between public and private organizations. These limitations were also the centre of focus in the qualitative interviews. Connected to the assessment of limitations in innovation, the web survey further asked the respondents to indicate how relevant certain innovation policies are for their innovation activities.

⁴ Luckerson, V. (2015). How Google Perfected the Silicon Valley Acquisition, downloaded from <http://time.com/3815612/silicon-valley-acquisition/> on the 10th of July 2017.

Companies face different limitations in their innovation activities. The respondents reported that businesses in their environment face limitations in innovation activities mainly due to insufficiently skilled workforce (fully agree: 22,2%; somewhat agree: 47%); lack of public R&D funding (fully agree: 23,6%; somewhat agree: 43,6%) and lack of risk funding from financial institutions (fully agree: 25,1%; somewhat agree: 37,1%).

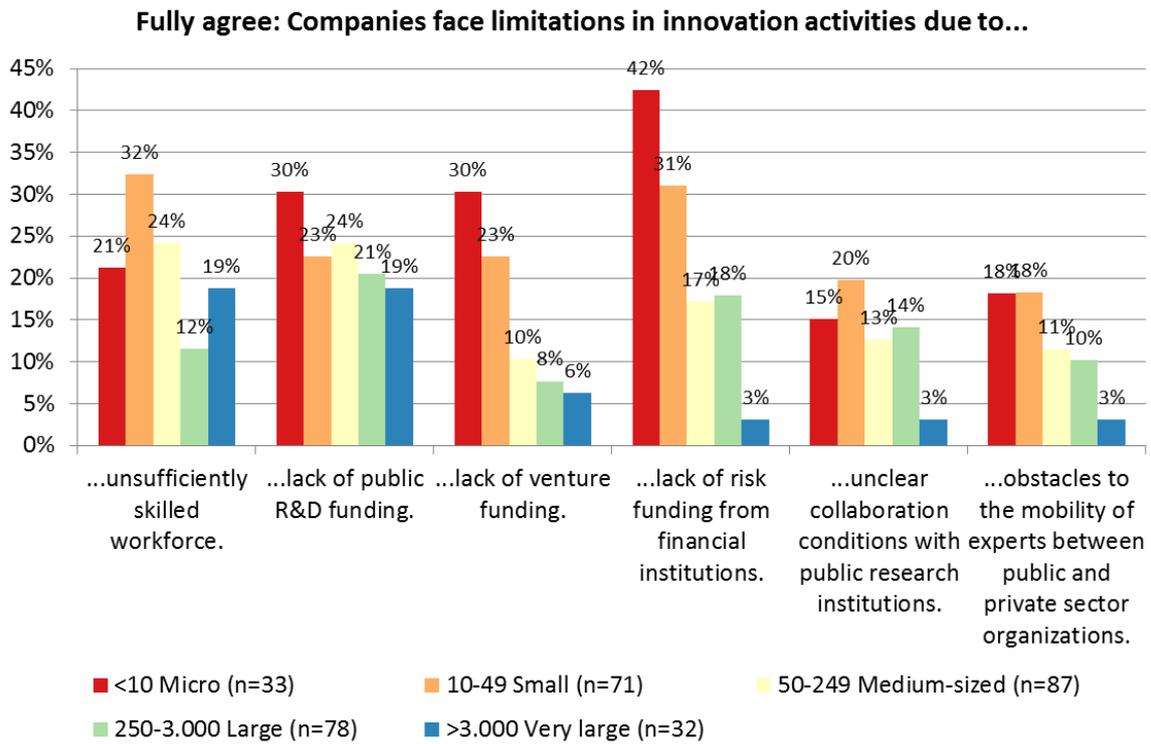
Figure 15: Limitations in innovation activities



Although the sectoral differences regarding the need for public R&D funding are not very marked, it can be said that agro-food companies more often cite difficulties obtaining R&D public funding (fully agree: 38%). Agro-food companies are also more likely to face limitations in innovation activities compared to the other sectors due to unclear collaboration activities with public research institutions (25%) and because of obstacles to the mobility between public and private organisations. Especially clean-tech (35%) and ICT companies (34%) indicated that there is very often a lack of risk funding from financial institutions in their innovation activities (see Appendix 2, Table 28. Limitations in innovation activities,).

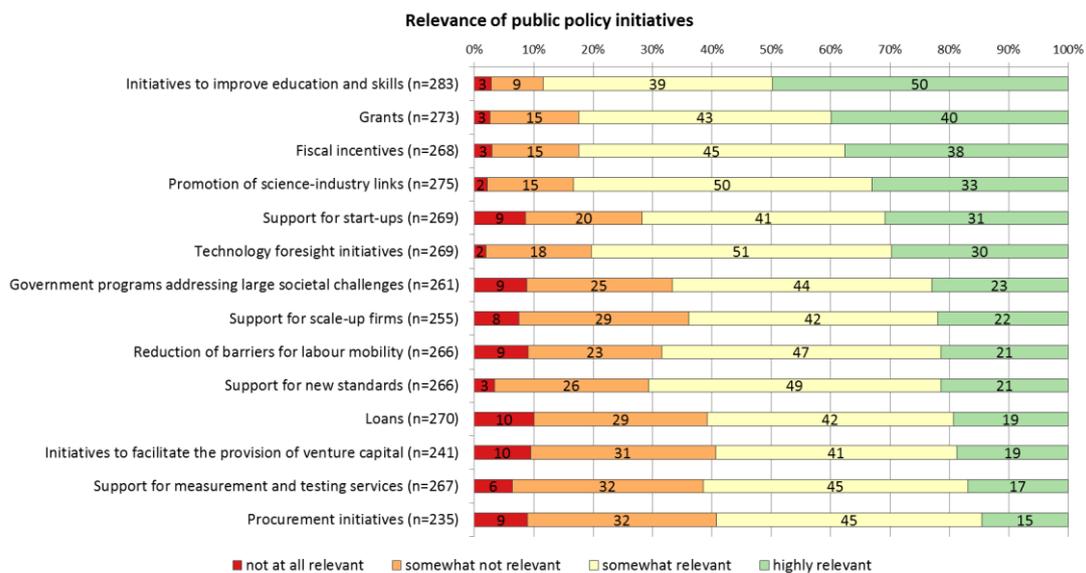
In the view of micro companies, companies in their business environment face limitations in innovation due to funding restrictions. They lack public R&D funding (30%), venture-capital funding (30%) and risk funding from financial institutions (42%). The lack of venture capital especially seems to be a problem for smaller companies and decreases with the size of the company. In contrast, very large firms indicated that companies in their business environment are not hindered by severe obstacles to innovate. They mainly see themselves confronted by insufficiently skilled work force (large companies: 12%; very large companies: 19%) and by the lack of public R&D funding (large companies: 21%; very large companies: 19%). This is not a surprising result as micro and small companies are more likely to experience resource constraints than larger companies.

Figure 16: Limitations in innovation activities by company size



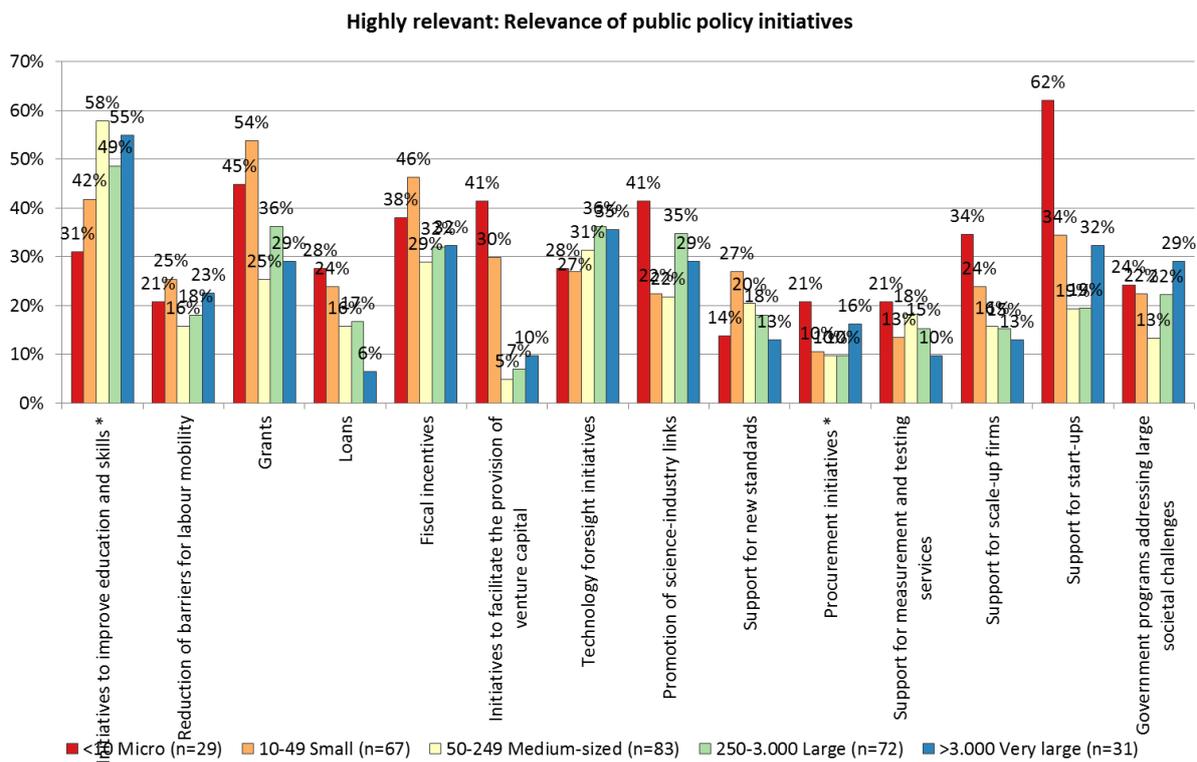
The distribution of limitations indicated in Figure 15 is also reflected in Figure 17. Overall, the responding companies believe that initiatives to improve education and skills are highly important for supporting their innovation activities (highly relevant: 50%; somewhat relevant: 39%). Additionally, the respondents rated grants (highly relevant: 40%; somewhat relevant: 43%), fiscal initiatives (highly relevant: 38%; somewhat relevant: 45%) and technology foresight activities (highly relevant: 30%; somewhat relevant: 51%) as relevant public policy initiatives regarding their innovation activities.

Figure 17: Relevance of public policy initiatives



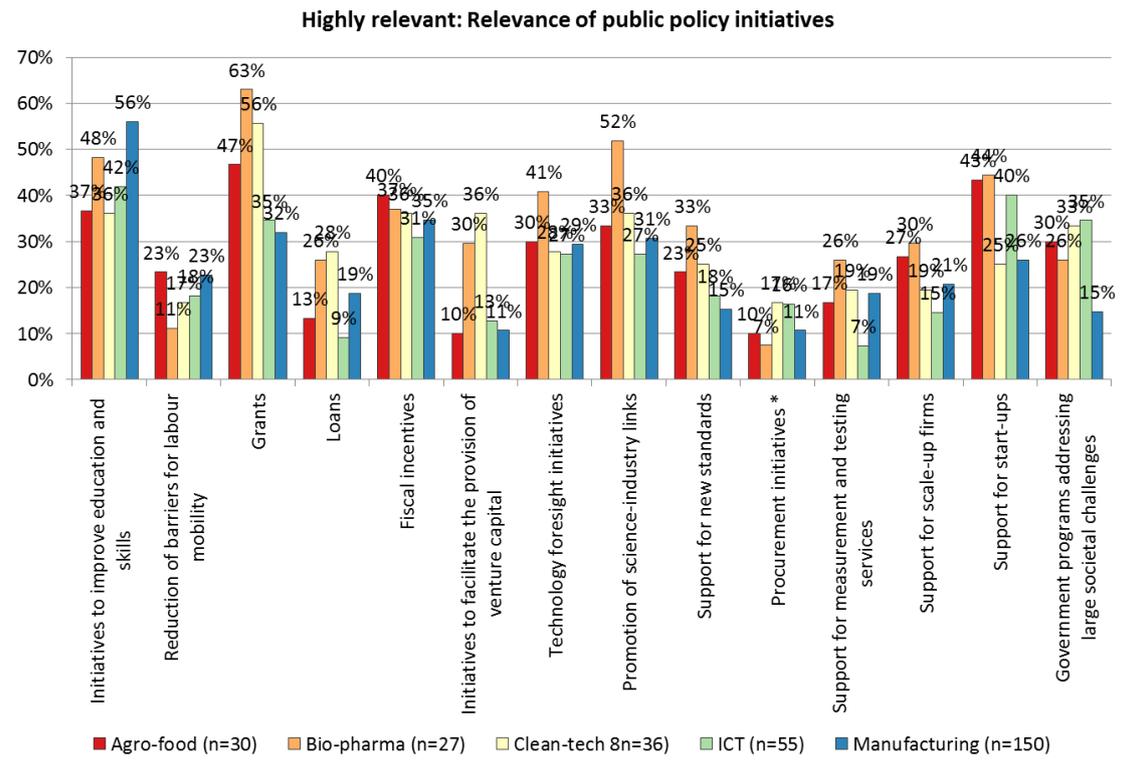
When looking at public policy initiatives by company size, it becomes obvious that micro companies in particular rate a large range of policy instruments as highly relevant: 62% believe that support for start-ups are highly relevant; 45% believe that grants are; and 41% state that initiatives to facilitate the provision of venture capital and the promotion of science-industry links are highly relevant. Small companies regard grants and fiscal initiatives as highly relevant for their innovation activities. In contrast, larger companies regard initiatives to improve education and skills as especially relevant for their innovation activities.

Figure 18: Relevance of public policy initiatives (by company size)



From a sectoral perspective, bio-pharmaceutical companies are more orientated towards basic research activities and regard grants (63%), technology foresight initiatives (41%), initiatives to improve education and skills (48%) and promotion of science-industry links (52%) as highly relevant. 56% of all manufacturing companies think that initiatives to improve education and skills are highly relevant to improve their innovation activities. Grants (56%), venture capital (36%) and government programs addressing large societal challenges (33%) seem to be highly relevant for clean-tech companies, in contrast to the other sectors.

Figure 19: Relevance of public policy initiatives (by sector)



7. Conclusion

The web survey was used as a tool to validate the findings and hypotheses derived from the qualitative interviews and case studies. It therefore helped to further widen the respondent base and to contribute to data triangulation.

The overall conclusion of the qualitative interviews, that organizational innovation activities have become significantly more complicated, are supported by the findings of the web survey. To counteract and manage the complex structures of innovation activities, companies increasingly engage with external partners. 73% of all respondents agreed that companies in their business environment cooperate with external partners of different backgrounds to better understand the potential of new and innovative project ideas. Furthermore, 81,6% agreed that companies in their business environment increasingly engage with research organisations to learn about technological opportunities. Therefore, more and more often innovations occur through the collaboration of partnering organizations in an ecosystem. This allows companies to stay competitive in a fast moving environment with constantly decreasing time horizon for producing innovations and fast moving changes in digitalisation processes.

These developments lead to a significant need for new tools to manage innovation activities in a collaborative environment, but also to keep track of changes in the wider and internal setting, and to be constantly up-to-date. Foresight activities for innovation planning and strategizing become crucial in this sense: 23% of all respondents indicated that companies in their business environment do it almost always and half of the respondents (57%) indicated that companies in their business environment engage in such activities at least for certain innovation activities. There is also a tendency to conduct the foresight activities jointly with external partners. The fear of losing information to external partners/stakeholders is giving way for the

awareness of the high potential of the knowledge of external partners/stakeholders for companies' own innovation activities.

However, the respondents of the web survey still believe that, in the first instance, companies in their business environment mainly focus on short-term innovation planning and strategizing. A vast majority of respondents (96,2%) believes that companies in their business environment regularly screen the market and the business environment. One explanation for this might be that most of the respondents indicated that a typical innovation project in their company lasts 1 to 3 years and that companies in their business environment mainly orientate their innovation activities to the trends and needs of their customers. The orientation with client needs and their concrete requests is keeping companies focussed on current trends/needs. Around half of the very large companies (52%) agree that involving external stakeholders in early innovation phases is important to deal with changes in the business environment.

In that regard, the absorptive capacity with respect to external knowledge and integrating it into the company's innovation processes has become critical. Most companies are very aware of this. 88,8% of all respondents reported that companies in their business environment invest more in internal R&D to deal with changes in the business environment. These investments may take the form of establishing autonomous organizational units for the development of more radical innovations (56,8% respondents agree that companies in their business environment do so) or in form of building up open innovation structures. In the case of large, international companies this means that they regularly buy-in new and promising start-ups with highly innovative technologies.

However, one crucial hampering factor with regard to the absorptive capacity of external knowledge may be the lack of skilled workforce. 89% of the respondents reported that companies in their business environment have problems in hiring skilled workforce. Especially small companies face this problem as they are very often not able to offer conditions that skilled workers may get from larger companies in the same field. However, very large companies also agree that companies in their business environment mainly face limitations in their innovation activities due to insufficiently skilled workforce. Additionally, financial restrictions are severe hampering factors for companies, once again specifically for smaller companies.

Innovation policy tries to counteract these limitations in innovation activities. The respondents of the web survey reported, which public policy initiatives are relevant for their innovation activities. Micro and small companies especially rate initiatives as highly relevant which help them to position themselves in their business environment (e.g. support for start-ups; promotion of science-industry links; initiatives to facilitate the provision of venture capital). In contrast, larger companies rather regard initiatives to improve education and skills as highly relevant for their innovation activities. From a sectoral perspective, companies which are mostly active in the field of basic research (e.g. bio-pharmaceutical companies) regard the promotion of science and public policy initiatives to build bridges as highly relevant for their innovation activities. For companies that are more orientated in applied science, public policy initiatives to improve education and skills, the support for start-ups or government programs addressing societal challenges, for example, are more relevant.

Appendix 1. Web Survey Content



UNIVERSITY OF TWENTE.



Seite 01
start

Survey on Industrial Innovation in Transition

This survey is part of the study on Industrial Innovation in Transition (No. 649351) - an undertaking of

Aalto University, The University of Manchester, JOANNEUM RESEARCH, The University of Twente and Zabala Innovation Consulting and is funded by the Horizon 2020 Programme of the European Commission.

The purpose of our study is to create a holistic understanding of the practices of the most innovative European companies in order to produce up to date best practice guidance for CTOs and innovation policy advice for Member States and the European Commission.

This survey builds on interviews undertaken with 694 CEOs/CTOs/Innovation Managers, and its purpose is to test our analysis of the links between innovation management and the broader company setting. Therefore, we would like to invite you to share your thoughts and opinions on your business environment and its implications for your company.

It will take no more than 10 minutes to answer the survey.

If some questions touch upon issues in which you have not been directly involved or which are not at the core of your expertise, we would appreciate it if you could answer the question to the best of your knowledge or forward the survey link to an appropriate person in your organisation. All data entered is saved when you close the browser or when you press "Pause the interview" and will be called up automatically the next time you open the survey. You may then add changes to your original answers if required.

We adhere to very strict privacy and confidentiality rules. The information collected through the survey will only be used in the context of our research for the current study and no identifiable or individual data will be disclosed to any third party.

You may also find further information and preliminary results of the project on the project website:
<http://www.iit-project.eu/>

Thank you for your support!

Organisational Information

question('GI01', 'spacing=0')

Please select the options from the following menus which best describe your company.

Country

[Please choose]

question('GI02', 'spacing=0')

Company type

[Please choose]

question('GI03', 'spacing=0')

Size of the company
(number of persons employed)

[Please choose]

question('GI04', 'spacing=0')

Market orientation of your company

[Please choose]

question('GI05', 'spacing=50')

Time horizon, in years, of a
typical innovation project for
your company

[Please choose]

In which sector(s) does your company primarily operate?

- Agro-food
- Bio-pharma
- Clean-tech
- ICT
- Manufacturing
- Other, please specify: ⇒ GI08_02 ⇐

Which statement regarding the relation business and innovation strategy best applies to your company?

- The business and innovation strategies are managed in a balanced way.
- More risky and disruptive innovations are hindered by the business
- strategy. None, of the above applies, but: ⇒ GI08_01 ⇐
- I don't know.

Seite 03

BIS

Innovation Strategy

Do you agree with the following statements regarding innovation strategies of companies operating in your business environment?

In our business environment...	disagree	somewhat disagree	somewhat agree	fully agree	don't know
...companies mainly orientate their innovation activities to the trends and needs of their customers.	<input type="radio"/>				
...companies mainly orientate their innovation activities to opportunities generated by future technological advances.	<input type="radio"/>				
...companies increasingly engage in open innovation activities when conducting risky innovation projects.	<input type="radio"/>				
...large, international companies regularly buy-in new and promising start-ups with highly innovative technologies.	<input type="radio"/>				
...companies tend to establish autonomous organizational units  for the development of more radical innovations.	<input type="radio"/>				

Seite 04

IM

Innovation Strategy

Which of the following actions are important for companies in your business environment to deal with changes in that environment?

	not important	somewhat not important	somewhat important	very important	don't know
regularly screening the market and business environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
investing more into internal R&D	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
buying in external expertise (consultancy services)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
involving external stakeholders in early innovation phases	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
establishing a broad and diversified product portfolio	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
other, please specify: ⇒ MQ03_01 ⇐	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

In your opinion, do companies in your business environment tend to conduct foresight activities for innovation planning and strategising?

- Yes almost always.
- Sometimes, but focus more on current events for innovation planning and strategising.
- Rarely or never, instead focus primarily on current events for innovation planning and
- strategising. I don't know.

Innovation Ecosystem

question('MQ07')

Do you agree with the following trends regarding collaborative innovation activities in your business environment in the last five years?

During the last five years companies...

...increasingly engaged in associations/boards /committees to exert strategic influence on legal/standardization/norm settings.

disagree somewhat disagree somewhat agree fully agree don't know

...increasingly engaged with research organisations to learn about technological opportunities.	<input type="radio"/>				
...increasingly engaged with external partners with different backgrounds to understand better the potential of new and innovative project ideas.	<input type="radio"/>				
...restricted engagement to long-term and trusted partners in a close bilateral way in order to protect internal competences and knowledge in the best possible way.	<input type="radio"/>				
...engaged less with others in their business environment.	<input type="radio"/>				
...did not make changes in their collaborative innovation activities.	<input type="radio"/>				
...⇒ MQ03_04 ⇐.	<input type="radio"/>				

In your opinion, do companies in your business environment face the following limitations in innovation activities?

Innovation Policy

Please assess the relevance to your company of the following public policy initiatives regarding your innovation activities.

If one of the following public policy initiatives does not exist in your country, you might still assess its potential relevance regarding your innovation activities. In this case, please also tick the check-box 'Does not exist in my country' on the right-hand side.

	not at all relevant	somewhat not relevant	somewhat relevant	highly relevant	don't know	Does not exist in my country
Initiatives to improve education and skills 	<input type="radio"/>					
Reduction of barriers for labour mobility	<input type="radio"/>	<input type="checkbox"/>				
Grants	<input type="radio"/>					
Loans	<input type="radio"/>					
Fiscal incentives	<input type="radio"/>					

Initiatives to facilitate the provision of venture capital	<input type="radio"/>	<input type="checkbox"/>				
Technology foresight initiatives	<input type="radio"/>					
Promotion of science-industry links	<input type="radio"/>					
Support for new standards	<input type="radio"/>					
Procurement initiatives	<input type="radio"/>					
Support for measurement and testing services	<input type="radio"/>					
Support for scale-up firms	<input type="radio"/>					
Support for start-ups	<input type="radio"/>					
Government programs addressing large societal challenges	<input type="radio"/>	<input type="checkbox"/>				
Other, please specify: ⇒ MQ03_02 ⇐	<input type="radio"/>					

You have now reached the last page of the survey.

If you wish to make changes to your responses, please press **"Back"** at the bottom left of the page to return to

the question concerned. Furthermore, all data entered is **saved when you close the browser** or when you press **"Pause the interview"** and will be called up automatically the next time you open the survey. You may then add changes to your original answers if required.

Assuming you do not want to modify any of your answers, we kindly ask you to complete the survey by clicking on the button **"Close the survey"**.

Additionally, we greatly appreciate any feedback you are willing to give us regarding the online survey. Please use the box below.

question('FB03', 'spacing=10')

question('FB04')

Please send me publicly available project results to the following e-mail: ⇒ FB05_01 ⇐



At this point, we wish to express our sincere thanks to you for participating in the survey!
Thank you for completing this questionnaire!

We would like to thank you very much for helping us.

Your answers were transmitted, you may close the browser window or tab now.

For further information or if you have any questions please do not hesitate to contact us: Angelika Sauer, iit@joanneum.at

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Sample Descriptives

Table 2: Respondents by country

	Fully answered (n=300): Column N %	Partially answered (n=71): Column N %
AT	41,3%	23,9%
CZ	1,7%	4,2%
DE	8,3%	16,9%
EE	3,7%	1,4%
ES	19,7%	28,2%
FI	7,0%	11,3%
IE	2,7%	1,4%
IT	0,7%	2,8%
NE	3,3%	7,0%
PT	1,3%	0,0%
UK	10,7%	2,8%
Total	300	71

Table 3: Respondents by sector

	Total	Column N %
Agro-Food	39	10,5%
Bio-Pharma	32	8,6%
Clean-Tech	42	11,3%
ICT	67	18,0%
Manufacturing	183	49,1%
Other	13	3,5%

Table 4: Respondents by size

	Total	Column N %
National or domestic	37	11%

International	107	31%
National and international	197	58%
Total	341	100%

Table 5: Respondents by company type

	Total	Column N %
Company group (head office)	94	27,6%
Subsidiary of company group	75	22,1%
Independent (single company)	149	43,8%
Other	22	580,0%
Total	340	100,0%

Table 6: Respondents by market orientation

	Total	Column N %
National or domestic	37	10,9%
International	107	31,4%
National and international	197	57,8%
Total	341	100,0%

Table 7: Respondents by time of innovation process

	Total	% of N
< 1	28	8,2%
1 -3	222	64,9%
4 - 7	74	21,6%
>8	18	5,3%
Total	342	100,0%

Business and innovation strategy

Table 8: Do you agree with the following statements regarding innovation strategies of companies operating in your business environment?

	Disagree (Row N %)	Some- what disagree (Row N %)	Some-what agree (Row N %)	fully agree (Row N %)	absolute value (total)
In our business environment...					

...companies mainly orientate their innovation activities to the trends and needs of their customers. (n=322)	0,9%	5,9%	36,3%	56,8%	322
...companies mainly orientate their innovation activities to opportunities generated by future technological advances.(n=317)	0,6%	16,4%	53,6%	29,3%	317
...companies increasingly engage in open innovation activities when conducting risky innovation projects. (n=276)	18,5%	33%	37,7%	10,9%	276
...large, international companies regularly buy-in new and promising start-ups with highly innovative technologies.(n=298)	12,8%	18,8%	35,9%	32,6%	298
...companies tend to establish autonomous organizational units for the development of more radical innovations.(n=273)	13,2%	30%	41%	15,8%	273

Table 9 Do you agree with the following statements regarding innovation strategies of companies operating in your business environment? (by company size)

In our business environment...		<10 Micro (n=37): Column N %	10-49 Small (n=76): Column N %	50-249 Medium -sized (n=94): Column N %	250-3000 Large (n=81): Column N %	>3000 Very large (n=32): Column N %
...companies mainly orientate their innovation activities to the trends and needs of their customers.	disagree	0,0%	1,3%	0,0%	2,5%	0,0%
	somewhat disagree	0,0%	9,2%	5,3%	2,5%	15,6%
	somewhat agree	35,1%	35,5%	42,6%	32,1%	31,3%
	fully agree	64,9%	53,9%	52,1%	63,0%	53,1%
...companies mainly orientate their innovation activities to opportunities generated by future technological advances.(n=317)	disagree	2,7%	1,3%	0,0%	0,0%	0,0%
	somewhat disagree	13,5%	13,2%	13,8%	21,0%	21,9%
	somewhat agree	37,8%	46,1%	61,7%	58,0%	46,9%
	fully agree	43,2%	36,8%	22,3%	21,0%	31,3%
...companies increasingly engage in open innovation activities when	disagree	13,5%	14,5%	14,9%	18,5%	15,6%
	somewhat disagree	21,6%	26,3%	28,7%	32,1%	31,3%

conducting risky innovation projects. (n=276)	somewhat agree	32,4%	31,6%	30,9%	32,1%	37,5%
	fully agree	10,8%	11,8%	9,6%	4,9%	12,5%
...large, international companies regularly buy-in new and promising start-ups with highly innovative technologies.(n=298)	disagree	0,0%	9,2%	14,9%	16,0%	12,5%
	somewhat disagree	16,2%	11,8%	14,9%	22,2%	25,0%
	somewhat agree	32,4%	30,3%	33,0%	35,8%	34,4%
	fully agree	43,2%	36,8%	30,9%	19,8%	25,0%
...companies tend to establish autonomous organizational units for the development of more radical innovations.(n=273)	disagree	0,0%	9,2%	7,4%	22,2%	12,5%
	somewhat disagree	13,5%	21,1%	33,0%	30,9%	15,6%
	somewhat agree	40,5%	34,2%	37,2%	28,4%	37,5%
	fully agree	21,6%	14,5%	7,4%	9,9%	28,1%

Table 10 Do you agree with the following statements regarding innovation strategies of companies operating in your business environment? (by sector)

In our business environment...		Agro-food (n=35): Column N %	Bio-pharma (n=29): Column N %	Clean-tech (n=40) : Column N %	ICT (n=60) : Column N %	Manufacturing (n=177): Column N %	Other (n=10) : Column N %
...companies mainly orientate their innovation activities to the trends and needs of their customers.	disagree	0,0%	0,0%	2,5%	1,7%	0,6%	0,0%
	somewhat disagree	11,4%	6,9%	10,0%	5,0%	4,0%	10,0%
	somewhat agree	22,9%	51,7%	37,5%	43,3%	33,3%	40,0%
	fully agree	65,7%	41,4%	50,0%	50,0%	62,1%	70,0%
...companies mainly orientate their innovation activities to opportunities generated by future technological advances.(n=317)	disagree	2,9%	3,4%	0,0%	0,0%	0,6%	0,0%
	somewhat disagree	17,1%	20,7%	7,5%	10,0%	16,4%	60,0%
	somewhat agree	42,9%	41,4%	47,5%	50,0%	59,3%	20,0%
	fully agree	34,3%	31,0%	45,0%	40,0%	22,0%	30,0%

...companies increasingly engage in open innovation activities when conducting risky innovation projects. (n=276)	disagree	22,9%	13,8%	10,0%	6,7%	16,4%	20,0%
	somewhat disagree	17,1%	20,7%	37,5%	23,3%	30,5%	30,0%
	somewhat agree	42,9%	27,6%	32,5%	41,7%	29,9%	30,0%
	fully agree	2,9%	24,1%	12,5%	11,7%	9,0%	10,0%
...large, international companies regularly buy-in new and promising start-ups with highly innovative technologies.(n=298)	disagree	5,7%	6,9%	15,0%	1,7%	14,1%	20,0%
	somewhat disagree	17,1%	3,4%	32,5%	11,7%	18,6%	30,0%
	somewhat agree	37,1%	17,2%	22,5%	33,3%	33,9%	70,0%
	fully agree	22,9%	58,6%	22,5%	48,3%	24,3%	0,0%
...companies tend to establish autonomous organizational units for the development of more radical innovations.(n=273)	disagree	14,3%	6,9%	10,0%	8,3%	10,7%	20,0%
	somewhat disagree	25,7%	17,2%	22,5%	18,3%	31,1%	10,0%
	somewhat agree	28,6%	34,5%	32,5%	40,0%	33,3%	60,0%
	fully agree	14,3%	13,8%	17,5%	20,0%	10,7%	10,0%

Innovation management

Table 11 Which of the following actions are important for companies in your business environment to deal with changes in that environment?

	not important	somewhat not important	somewhat important	very important	absolute value (total)
regularly screening the market and business environment	0,3%	3,5%	22,9%	73,3%	315
investing more into internal R&D	0%	11,2%	50%	38,8%	312
buying in external expertise (consultancy services)	5,5%	28,1%	55,5%	11%	310

involving external stakeholders in early innovation phases	9,7%	24,8%	37,2%	28,2%	298
establishing a broad and diversified product portfolio	5,9%	21,9%	47,4%	24,8%	306
other	0%	0%	9,1%	90,9%	11

Table 12 Which of the following actions are important for companies in your business environment to deal with changes in that environment? (by company size)

		<10 Micro (n=36): Column N %	10-49 Small (n=76): Column N %	50-249 Medium -sized (n=91): Column N %	250- 3000 Large (n=79): Column N %	>3000 Very large (n=33): Column N %
regularly screening the market and business environment	not important	2,8%	0,0%	0,0%	0,0%	0,0%
	somewhat not important	8,3%	1,3%	3,3%	2,5%	6,1%
	somewhat important	19,4%	31,6%	24,2%	19,0%	9,1%
	very important	69,4%	67,1%	71,4%	77,2%	84,8%
investing more into internal R&D	not important	0,0%	0,0%	0,0%	0,0%	0,0%
	somewhat not important	13,9%	7,9%	13,2%	6,3%	21,2%
	somewhat important	47,2%	52,6%	51,6%	49,4%	36,4%
	very important	30,6%	36,8%	35,2%	44,3%	42,4%
buying in external expertise (consultancy services)	not important	8,3%	6,6%	6,6%	3,8%	0,0%
	somewhat not important	22,2%	32,9%	22,0%	31,6%	27,3%
	somewhat important	58,3%	42,1%	65,9%	50,6%	54,5%
	very important	8,3%	11,8%	4,4%	13,9%	18,2%
involving external stakeholders in early innovation phases	not important	8,3%	11,8%	9,9%	7,6%	6,1%
	somewhat not important	25,0%	21,1%	25,3%	29,1%	9,1%
	somewhat important	38,9%	31,6%	37,4%	35,4%	30,3%
	very important	19,4%	23,7%	22,0%	26,6%	51,5%
	not important	5,6%	6,6%	7,7%	1,3%	9,1%

establishing a broad and diversified product portfolio	somewhat not important	25,0%	19,7%	18,7%	24,1%	18,2%
	somewhat important	38,9%	47,4%	45,1%	46,8%	51,5%
	very important	19,4%	22,4%	26,4%	26,6%	18,2%
other	not important	0,0%	0,0%	0,0%	0,0%	0,0%
	somewhat not important	0,0%	0,0%	0,0%	0,0%	3,0%
	somewhat important	0,0%	0,0%	0,0%	0,0%	0,0%
	very important	5,6%	2,6%	2,2%	2,5%	6,1%

Table 13 Which of the following actions are important for companies in your business environment to deal with changes in that environment? (by sector)

		Agro- food (n=32): Column N %	Bio- pharm a (n=28) : Column N %	Clean- tech (n=39) : Column N %	ICT (n=60) : Column N %	Manufacturin g (n=172): Column N %	Other (n=10) : Column N %
regularly screening the market and business environment	not important	0,0%	0,0%	0,0%	1,7%	0,0%	0,0%
	somewhat not important	12,5%	3,6%	2,6%	3,3%	2,3%	0,0%
	somewhat important	31,3%	17,9%	35,9%	21,7%	20,3%	30,0%
	very important	56,3%	75,0%	61,5%	71,7%	77,3%	90,0%
investing more into internal R&D	not important	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
	somewhat not important	9,4%	10,7%	12,8%	18,3%	8,7%	10,0%
	somewhat important	46,9%	53,6%	48,7%	48,3%	51,7%	50,0%

	very important	43,8%	35,7%	35,9%	30,0%	39,0%	60,0%
buying in external expertise (consultancy services)	not important	3,1%	3,6%	5,1%	6,7%	6,4%	0,0%
	somewhat not important	34,4%	32,1%	30,8%	28,3%	25,6%	20,0%
	somewhat important	46,9%	42,9%	56,4%	51,7%	57,6%	60,0%
	very important	12,5%	21,4%	5,1%	8,3%	8,7%	40,0%
involving external stakeholders in early innovation phases	not important	3,1%	7,1%	2,6%	8,3%	11,0%	0,0%
	somewhat not important	31,3%	17,9%	15,4%	21,7%	24,4%	20,0%
	somewhat important	37,5%	39,3%	41,0%	36,7%	32,6%	30,0%
	very important	18,8%	32,1%	33,3%	30,0%	26,7%	50,0%
establishing a broad and diversified product portfolio	not important	6,3%	3,6%	7,7%	6,7%	3,5%	20,0%
	somewhat not important	12,5%	21,4%	25,6%	28,3%	18,0%	20,0%
	somewhat important	43,8%	39,3%	41,0%	55,0%	46,5%	60,0%
	very important	28,1%	32,1%	23,1%	10,0%	29,1%	0,0%

Mapping the environment

Table 14: In your opinion, do companies in your business environment tend to conduct foresight activities for innovation planning and strategising?

	Total	Column N %
Yes almost always.	75	23,4%
Sometimes, but focus more on current events for innovation planning and strategising.	183	57,0%
Rarely or never, instead focus primarily on current events for innovation planning and strategising.	40	12,5%

I don't know.	23	7,2%
Total	321	100,0%

Table 15: In your opinion, do companies in your business environment tend to conduct foresight activities for innovation planning and strategising? (by company size)

	<10 Micro (n=37): Column N %	10-49 Small (n=75): Column N %	50-249 Medium- sized (n=93): Column N %	250-3000 Large (n=79): Column N %	>3000 Very large (n=33): Column N %
Yes almost always.	27,0%	21,3%	15,1%	27,8%	33,3%
Sometimes, but focus more on current events for innovation planning and strategising.	40,5%	61,3%	60,2%	59,5%	57,6%
Rarely or never, instead focus primarily on current events for innovation planning and strategising.	21,6%	14,7%	11,8%	8,9%	6,1%
I don't know.	10,8%	2,7%	12,9%	3,8%	3,0%

Table 16: In your opinion, do companies in your business environment tend to conduct foresight activities for innovation planning and strategising? (by sector)

	Agro- food (n=32): Column N %	Bio- pharma (n=29): Column N %	Clean- tech (n=39): Column N %	ICT (n=62): Column N %	Manufacturing (n=171): Column N %
Yes almost always.	18,8%	41,4%	25,6%	24,2%	18,1%
Sometimes, but focus more on current events for innovation planning and strategising.	59,4%	34,5%	30,8%	48,4%	52,0%
Rarely or never, instead focus primarily on current events for innovation planning and strategising.	15,6%	6,9%	5,1%	9,7%	11,7%
I don't know.	3,1%	0,0%	2,6%	3,2%	6,4%

Table 17: Do you agree that companies in your business environment rely on contributions from external stakeholders for foresight activities?

	Total	Column N %
Yes almost always.	52	20,2%

Sometimes, but focus more on current events for innovation planning and strategising.	157	60,9%
Rarely or never, instead focus primarily on current events for innovation planning and strategising.	38	14,7%
I don't know.	11	4,3%
Total	258	100,0%

Table 18: Do you agree that companies in your business environment rely on contributions from external stakeholders for foresight activities? (by company size)

	<10 Micro (n=25): Column N %	10-49 Small (n=61): Column N %	50-249 Medium-sized (n=69): Column N %	250-3.000 Large (n=71): Column N %	>3.000 Very large (n=30): Column N %
Yes almost always.	24,0%	9,8%	20,3%	23,9%	26,7%
Sometimes.	64,0%	57,4%	59,4%	62,0%	66,7%
Rarely or never.	8,0%	27,9%	14,5%	9,9%	6,7%
I don't know.	4,0%	4,9%	5,8%	4,2%	0,0%

Table 19: Do you agree that companies in your business environment rely on contributions from external stakeholders for foresight activities? (by sector)

	Agro-food (n=26): Column N %	Bio- pharma (n=27): Column N %	Clean-tech (n=32): Column N %	ICT (n=50): Column N %	Manufacturing (n=139): Column N %
Yes almost always.	30,8%	25,9%	28,1%	18,0%	13,7%
Sometimes.	53,8%	40,7%	37,5%	58,0%	56,8%
Rarely or never.	11,5%	11,1%	3,1%	12,0%	13,7%
I don't know.	0,0%	3,7%	0,0%	0,0%	2,9%

Table 20: Do you agree that the following are the reasons for short-term innovation planning and strategising in your business environment?

	disagree	somewh at disagree	somewh at agree	fully agree	absolute value (total)
Orientation with client needs and their concrete requests, is keeping companies focussed on current trends/needs	0,5%	2,3%	37,7%	59,5%	220

Lack of skills to use collected data for future product development	8,8%	25,9%	46,3%	19%	216
Lack of internal resources to conduct long-term foresight activities	5,5%	13,6%	45,9%	35%	220
Long term foresight is not regarded as helpful for strategic planning	17,2%	36,4%	37,8%	8,6%	209
Other	0%	25%	25%	50%	4

Table 21: Do you agree that the following are the reasons for short-term innovation planning and strategising in your business environment? (by company size)

		<10 Micro (n=24): Column n N %	10-49 Small (n=56): Column n N %	50-249 Medium- sized (n=66): Column n N %	250- 3.000 Large (n=55): Column n N %	>3.000 Very large (n=21): Column n N %
Orientation with client needs and their concrete requests, is keeping companies focussed on current trends/needs.	disagree	0,0%	1,8%	0,0%	0,0%	0,0%
	somewhat disagree	0,0%	1,8%	1,5%	1,8%	9,5%
	somewhat agree	29,2%	32,1%	45,5%	40,0%	28,6%
	fully agree	70,8%	60,7%	53,0%	58,2%	61,9%
Lack of skills to use collected data for future product development	disagree	4,2%	12,5%	4,5%	10,9%	9,5%
	somewhat disagree	12,5%	14,3%	27,3%	30,9%	47,6%
	somewhat agree	50,0%	51,8%	47,0%	36,4%	38,1%
	fully agree	25,0%	21,4%	16,7%	20,0%	4,8%
Lack of internal resources to conduct long-term foresight activities	disagree	8,3%	8,9%	1,5%	5,5%	4,8%
	somewhat disagree	4,2%	5,4%	12,1%	23,6%	23,8%
	somewhat agree	37,5%	44,6%	54,5%	41,8%	38,1%
	fully agree	45,8%	41,1%	30,3%	29,1%	33,3%
Long term foresight is not regarded as helpful for strategic planning.	disagree	12,5%	21,4%	9,1%	20,0%	19,0%
	somewhat disagree	16,7%	32,1%	43,9%	34,5%	28,6%
	somewhat agree	33,3%	37,5%	33,3%	40,0%	28,6%
	fully agree	16,7%	5,4%	9,1%	3,6%	14,3%
Other	disagree	0,0%	0,0%	0,0%	0,0%	0,0%

	somewhat disagree	0,0%	0,0%	0,0%	0,0%	4,8%
	somewhat agree	0,0%	1,8%	0,0%	0,0%	0,0%
	fully agree	0,0%	0,0%	0,0%	0,0%	9,5%

Table 22: Do you agree that the following are the reasons for short-term innovation planning and strategising in your business environment? (by sector)

		Agro-food (n=25): Column N %	Bio-pharma (n=14): Column N %	Clean-tech (n=23): Column N %	ICT (n=42): Column N %	Manufacturing (n=121): Column N %	Other (n=9): Column N %
Orientation with client needs and their concrete requests, is keeping companies focussed on current trends/needs.	disagree	4,0%	0,0%	0,0%	0,0%	0,0%	0,0%
	somewhat disagree	4,0%	0,0%	8,7%	2,4%	1,7%	0,0%
	somewhat agree	40,0%	64,3%	43,5%	42,9%	36,4%	55,6%
	fully agree	52,0%	35,7%	47,8%	54,8%	61,2%	66,7%
Lack of skills to use collected data for future product development	disagree	4,0%	7,1%	13,0%	7,1%	11,6%	11,1%
	somewhat disagree	16,0%	14,3%	30,4%	31,0%	24,8%	33,3%
	somewhat agree	48,0%	57,1%	43,5%	45,2%	42,1%	33,3%
	fully agree	32,0%	21,4%	8,7%	14,3%	19,8%	33,3%
Lack of internal resources to conduct long-term foresight activities	disagree	4,0%	7,1%	8,7%	9,5%	6,6%	0,0%
	somewhat disagree	4,0%	7,1%	13,0%	11,9%	17,4%	0,0%
	somewhat agree	44,0%	50,0%	47,8%	40,5%	43,0%	44,4%
	fully agree	48,0%	28,6%	30,4%	38,1%	33,1%	77,8%
Long term foresight is not regarded as helpful for strategic planning.	disagree	24,0%	28,6%	8,7%	14,3%	16,5%	11,1%
	somewhat disagree	28,0%	35,7%	47,8%	33,3%	32,2%	55,6%
	somewhat agree	28,0%	21,4%	34,8%	35,7%	41,3%	22,2%
	fully agree	8,0%	7,1%	8,7%	11,9%	5,8%	22,2%

Innovation Ecosystem

Table 23: Do you agree with the following trends regarding collaborative innovation activities in your business environment in the last five years?

During the last five years companies...	disagree	somewh at disagree	somewh at agree	fully agree	absolute value (total)
...increasingly engaged in associations/boards/committees to exert strategic influence on legal/standardization/norm settings.	3,5%	23,3%	51%	22,2%	288
...increasingly engaged with research organisations to learn about technological opportunities.	1,4%	17%	57,1%	24,5%	294
...increasingly engaged with external partners with different backgrounds to understand better the potential of new and innovative project ideas.	2,1%	24,9%	55%	18%	289
...restricted engagement to long-term and trusted partners in a close bilateral way in order to protect internal competences and knowledge in the best possible way.	8,2%	37,3%	40,9%	13,6%	279
...engaged less with others in their business environment.	16,4%	48,2%	29,9%	5,5%	274
...did not make changes in their collaborative innovation activities.	23,7%	39,5%	31,6%	5,3%	266

Table 24: Do you agree with the following trends regarding collaborative innovation activities in your business environment in the last five years? (company size)

During the last five years companies...		<10 Micro (n=31) : Colum n N %	10-49 Small (n=66) : Colum n N %	50-249 Mediu m-sized (n=86): Column N %	250- 3.000 Large (n=76) : Colum n N %	>3.000 Very large (n=33) : Colum n N %
...increasingly engaged in associations/boards/committees to exert strategic influence on legal/standardization/norm settings.	disagree	3,2%	9,1%	1,2%	2,6%	0,0%
	somewha t disagree	19,4%	24,2%	22,1%	19,7%	30,3%
	somewha t agree	45,2%	40,9%	54,7%	55,3%	48,5%
	fully agree	25,8%	19,7%	20,9%	22,4%	21,2%

...increasingly engaged with research organisations to learn about technological opportunities.	disagree	3,2%	3,0%	1,2%	0,0%	0,0%
	somewhat disagree	6,5%	25,8%	18,6%	11,8%	18,2%
	somewhat agree	64,5%	51,5%	58,1%	59,2%	48,5%
	fully agree	25,8%	19,7%	22,1%	28,9%	30,3%
...increasingly engaged with external partners with different backgrounds to understand better the potential of new and innovative project ideas.	disagree	0,0%	3,0%	2,3%	1,3%	3,0%
	somewhat disagree	12,9%	34,8%	23,3%	22,4%	21,2%
	somewhat agree	61,3%	42,4%	54,7%	60,5%	54,5%
	fully agree	22,6%	18,2%	16,3%	14,5%	21,2%
...restricted engagement to long-term and trusted partners in a close bilateral way in order to protect internal competences and knowledge in the best possible way.	disagree	9,7%	6,1%	3,5%	13,2%	6,1%
	somewhat disagree	29,0%	36,4%	39,5%	34,2%	33,3%
	somewhat agree	38,7%	31,8%	43,0%	38,2%	42,4%
	fully agree	16,1%	19,7%	7,0%	13,2%	12,1%
...engaged less with others in their business environment.	disagree	19,4%	9,1%	10,5%	21,1%	21,2%
	somewhat disagree	35,5%	40,9%	51,2%	42,1%	54,5%
	somewhat agree	22,6%	42,4%	20,9%	30,3%	12,1%
	fully agree	9,7%	4,5%	7,0%	1,3%	6,1%
...did not make changes in their collaborative innovation activities.	disagree	35,5%	25,8%	11,6%	18,4%	30,3%
	somewhat disagree	22,6%	24,2%	43,0%	47,4%	27,3%

	somewhat agree	19,4%	37,9%	25,6%	26,3%	30,3%
	fully agree	6,5%	3,0%	4,7%	3,9%	6,1%

Table 25: Do you agree with the following trends regarding collaborative innovation activities in your business environment in the last five years? (sector)

		Agro- food (n=32): Column N %	Bio- pharma (n=25): Column N %	Clean- tech (n=35): Column N %	ICT (n=58): Column N %	Manu- facturin g (n=159) : Column N %	Other (n=10): Column N %
...increasingly engaged in associations/boards/committees to exert strategic influence on legal/standardization/norm settings.	disagree	6,3%	0,0%	0,0%	3,4%	3,8%	0,0%
	somewhat disagree	21,9%	24,0%	28,6%	25,9%	22,6%	30,0%
	somewhat agree	50,0%	48,0%	37,1%	48,3%	49,7%	70,0%
	fully agree	18,8%	28,0%	34,3%	22,4%	20,1%	20,0%
...increasingly engaged with research organisations to learn about technological opportunities.	disagree	0,0%	4,0%	0,0%	1,7%	1,9%	0,0%
	somewhat disagree	18,8%	20,0%	20,0%	15,5%	13,8%	60,0%
	somewhat agree	43,8%	44,0%	42,9%	62,1%	60,4%	50,0%
	fully agree	37,5%	32,0%	37,1%	19,0%	23,9%	10,0%
...increasingly engaged with external partners with different backgrounds to understand better the potential of new and innovative project ideas.	disagree	3,1%	0,0%	2,9%	1,7%	1,9%	0,0%
	somewhat disagree	25,0%	24,0%	20,0%	25,9%	25,2%	40,0%
	somewhat agree	53,1%	52,0%	51,4%	55,2%	53,5%	70,0%
	fully agree	18,8%	20,0%	25,7%	13,8%	18,9%	0,0%

...restricted engagement to long-term and trusted partners in a close bilateral way in order to protect internal competences and knowledge in the best possible way.	disagree	12,5%	8,0%	2,9%	6,9%	8,2%	0,0%
	somewhat disagree	40,6%	44,0%	48,6%	34,5%	29,6%	60,0%
	somewhat agree	28,1%	36,0%	34,3%	39,7%	42,1%	40,0%
	fully agree	9,4%	8,0%	11,4%	6,9%	15,7%	10,0%
...engaged less with others in their business environment.	disagree	15,6%	16,0%	25,7%	24,1%	13,2%	20,0%
	somewhat disagree	40,6%	60,0%	37,1%	43,1%	43,4%	30,0%
	somewhat agree	34,4%	16,0%	28,6%	17,2%	32,7%	30,0%
	fully agree	6,3%	8,0%	2,9%	1,7%	6,3%	10,0%
...did not make changes in their collaborative innovation activities.	disagree	34,4%	20,0%	22,9%	22,4%	18,9%	20,0%
	somewhat disagree	15,6%	36,0%	45,7%	39,7%	35,8%	10,0%
	somewhat agree	37,5%	28,0%	22,9%	17,2%	32,1%	60,0%
	fully agree	3,1%	4,0%	0,0%	6,9%	5,0%	0,0%

Limitations in innovation activities

Table 26: In your opinion, do companies in your business environment face the following limitations in innovation activities?

Companies face limitations in innovation activities due to...	disagree	somewhat disagree	somewhat agree	fully agree	absolute value (total)
...insufficiently skilled workforce. (n=302)	8,9%	21,9%	47%	22,2%	302
...lack of public R&D funding. (n=305)	7,9%	24,9%	43,6%	23,6%	305
...lack of venture funding. (n=282)	9,2%	31,2%	43,3%	16,3%	282
...lack of risk funding from financial institutions. (n=275)	10,9%	26,9%	37,1%	25,1%	275
...unclear collaboration conditions with public research institutions. (n=289)	12,8%	31,1%	41,5%	14,5%	289
...obstacles to the mobility of experts between public and private sector organizations. (n=259)	15,4%	25,9%	44%	14,7%	259

Table 27: In your opinion, do companies in your business environment face the following limitations in innovation activities? (by company size)

		<10 Micro (n=33): Column N %	10-49 Small (n=71): Column N %	50-249 Medium -sized (n=87): Column N %	250- 3.000 Large (n=78): Column N %	>3.000 Very large (n=32): Column N %
...insufficiently skilled workforce.	disagree	12,1%	7,0%	8,0%	9,0%	12,5%
	somewhat disagree	21,2%	21,1%	14,9%	26,9%	31,3%
	somewhat agree	45,5%	38,0%	51,7%	51,3%	37,5%
	fully agree	21,2%	32,4%	24,1%	11,5%	18,8%
...lack of public R&D funding.	disagree	6,1%	8,5%	8,0%	7,7%	9,4%
	somewhat disagree	12,1%	18,3%	26,4%	28,2%	40,6%
	somewhat agree	51,5%	50,7%	41,4%	43,6%	31,3%
	fully agree	30,3%	22,5%	24,1%	20,5%	18,8%
...lack of venture funding.	disagree	3,0%	8,5%	9,2%	9,0%	12,5%
	somewhat disagree	6,1%	23,9%	32,2%	29,5%	56,3%
	somewhat agree	57,6%	40,8%	37,9%	43,6%	18,8%
	fully agree	30,3%	22,5%	10,3%	7,7%	6,3%
...lack of risk funding from financial institutions.	disagree	3,0%	11,3%	9,2%	7,7%	21,9%
	somewhat disagree	6,1%	12,7%	27,6%	28,2%	53,1%
	somewhat agree	39,4%	42,3%	32,2%	33,3%	15,6%
	fully agree	42,4%	31,0%	17,2%	17,9%	3,1%
...unclear collaboration conditions with public research institutions.	disagree	24,2%	9,9%	12,6%	7,7%	12,5%
	somewhat disagree	18,2%	28,2%	34,5%	32,1%	21,9%
	somewhat agree	42,4%	32,4%	34,5%	44,9%	53,1%
	fully agree	15,2%	19,7%	12,6%	14,1%	3,1%
...obstacles to the mobility of experts between public	disagree	24,2%	14,1%	8,0%	10,3%	18,8%
	somewhat disagree	15,2%	15,5%	26,4%	25,6%	21,9%

and private sector organizations.	somewhat agree	30,3%	32,4%	35,6%	42,3%	46,9%
	fully agree	18,2%	18,3%	11,5%	10,3%	3,1%

Table 28: In your opinion, do companies in your business environment face the following limitations in innovation activities? (by sector)

		Agro- food (n=32): Column N %	Bio- pharma (n=28): Column N %	Clean- tech (n=37): Column N %	ICT (n=58): Column N %	Manu- facturin g (n=162) : Column N %	Other (n=10): Column N %
...insufficiently skilled workforce.	disagree	3,1%	7,1%	16,2%	8,6%	8,6%	10,0%
	somewhat disagree	28,1%	32,1%	27,0%	22,4%	17,3%	20,0%
	somewhat agree	43,8%	35,7%	40,5%	46,6%	50,6%	50,0%
	fully agree	21,9%	17,9%	13,5%	20,7%	22,2%	40,0%
...lack of public R&D funding.	disagree	12,5%	3,6%	10,8%	5,2%	10,5%	10,0%
	somewhat disagree	15,6%	14,3%	10,8%	24,1%	28,4%	30,0%
	somewhat agree	34,4%	50,0%	48,6%	43,1%	45,1%	40,0%
	fully agree	37,5%	32,1%	29,7%	27,6%	16,0%	40,0%
...lack of venture funding.	disagree	9,4%	3,6%	2,7%	1,7%	11,1%	20,0%
	somewhat disagree	21,9%	14,3%	16,2%	27,6%	35,2%	20,0%
	somewhat agree	43,8%	46,4%	43,2%	46,6%	37,7%	30,0%
	fully agree	21,9%	21,4%	27,0%	20,7%	8,0%	30,0%
...lack of risk funding from financial institutions.	disagree	15,6%	3,6%	2,7%	6,9%	11,1%	30,0%
	somewhat disagree	12,5%	10,7%	10,8%	22,4%	31,5%	20,0%
	somewhat agree	53,1%	46,4%	40,5%	24,1%	29,6%	50,0%
	fully agree	15,6%	25,0%	35,1%	34,5%	18,5%	0,0%
...unclear collaboration conditions with public research institutions.	disagree	6,3%	25,0%	18,9%	13,8%	12,3%	10,0%
	somewhat disagree	34,4%	3,6%	24,3%	27,6%	33,3%	40,0%

	somewhat agree	28,1%	53,6%	48,6%	34,5%	37,0%	50,0%
	fully agree	25,0%	14,3%	5,4%	15,5%	13,6%	10,0%
...obstacles to the mobility of experts between public and private sector organizations.	disagree	21,9%	21,4%	13,5%	6,9%	10,5%	30,0%
	somewhat disagree	15,6%	17,9%	29,7%	19,0%	24,7%	30,0%
	somewhat agree	28,1%	35,7%	40,5%	37,9%	36,4%	40,0%
	fully agree	25,0%	7,1%	5,4%	19,0%	12,3%	0,0%

Innovation policy

Table 29: Please assess the relevance to your company of the following public policy initiatives regarding your innovation activities.

	not at all relevant	somewhat not relevant	somewhat relevant	highly relevant	absolute value (total)
Initiatives to improve education and skills	2,8%	8,8%	38,5%	49,8%	283
Grants	2,6%	15%	42,5%	39,9%	266
Fiscal incentives	3%	14,6%	44,8%	37,7%	273
Promotion of science-industry links	2,2%	14,5%	50,2%	33,1%	270
Support for start-ups	8,6%	19,7%	40,9%	30,9%	268
Technology foresight initiatives	1,9%	17,8%	50,6%	29,7%	241
Government programs addressing large societal challenges	8,8%	24,5%	43,7%	23%	269
Support for scale-up firms	7,5%	28,6%	42%	22%	275
Reduction of barriers for labour mobility	9%	22,6%	47%	21,4%	266
Support for new standards	3,4%	25,9%	49,2%	21,4%	235
Loans	10%	29,3%	41,5%	19,3%	267
Initiatives to facilitate the provision of venture capital	9,5%	31,1%	40,7%	18,7%	255
Support for measurement and testing services	6,4%	32,2%	44,6%	16,9%	269
Procurement initiatives	8,9%	31,9%	44,7%	14,5%	261

Table 30: Please asses the relevance to your company of the following public policy initiatives regarding your innovation activities. (by company size)

		<10 Micro (n=29): Column N %	10-49 Small (n=67): Column N %	50-249 Mediu m-sized (n=83): Column N %	250- 3.000 Large (n=72): Column N %	>3.000 Very large (n=31): Column N %
Initiatives to improve education and skills (n=283)	not at all relevant	6,9%	4,5%	3,6%	0,0%	0,0%
	somewhat not relevant	10,3%	10,4%	8,4%	8,3%	6,5%
	somewhat relevant	44,8%	43,3%	30,1%	43,1%	35,5%
	highly relevant	31,0%	41,8%	57,8%	48,6%	54,8%
Reduction of barriers for labour mobility (n=266)	not at all relevant	24,1%	9,0%	6,0%	5,6%	6,5%
	somewhat not relevant	6,9%	23,9%	19,3%	19,4%	35,5%
	somewhat relevant	41,4%	40,3%	51,8%	43,1%	32,3%
	highly relevant	20,7%	25,4%	15,7%	18,1%	22,6%
Grants (n=273)	not at all relevant	3,4%	3,0%	4,8%	0,0%	0,0%
	somewhat not relevant	13,8%	7,5%	19,3%	18,1%	9,7%
	somewhat relevant	31,0%	34,3%	50,6%	33,3%	58,1%
	highly relevant	44,8%	53,7%	25,3%	36,1%	29,0%
Loans (n=270)	not at all relevant	13,8%	9,0%	8,4%	5,6%	19,4%
	somewhat not relevant	0,0%	28,4%	30,1%	36,1%	25,8%
	somewhat relevant	48,3%	35,8%	43,4%	29,2%	48,4%
	highly relevant	27,6%	23,9%	15,7%	16,7%	6,5%
Fiscal incentives (n=268)	not at all relevant	3,4%	3,0%	2,4%	1,4%	6,5%
	somewhat not relevant	3,4%	14,9%	14,5%	16,7%	12,9%
	somewhat relevant	51,7%	32,8%	49,4%	37,5%	41,9%
	highly relevant	37,9%	46,3%	28,9%	31,9%	32,3%
Initiatives to facilitate the provision of venture capital (n=241)	not at all relevant	3,4%	6,0%	9,6%	9,7%	9,7%
	somewhat not relevant	10,3%	23,9%	34,9%	20,8%	35,5%
	somewhat relevant	27,6%	32,8%	32,5%	40,3%	32,3%
	highly relevant	41,4%	29,9%	4,8%	6,9%	9,7%
Promotion of science-industry links (n=275)	not at all relevant	3,4%	4,5%	2,4%	0,0%	0,0%
	somewhat not relevant	20,7%	10,4%	14,5%	18,1%	6,5%
	somewhat relevant	41,4%	53,7%	49,4%	41,7%	54,8%

	highly relevant	27,6%	26,9%	31,3%	36,1%	35,5%
Technology foresight initiatives (n=269)	not at all relevant	3,4%	1,5%	2,4%	1,4%	0,0%
	somewhat not relevant	10,3%	23,9%	18,1%	16,7%	6,5%
	somewhat relevant	44,8%	43,3%	47,0%	44,4%	64,5%
	highly relevant	41,4%	22,4%	21,7%	34,7%	29,0%
Support for new standards (n=266)	not at all relevant	6,9%	7,5%	1,2%	1,4%	0,0%
	somewhat not relevant	24,1%	19,4%	26,5%	27,8%	16,1%
	somewhat relevant	44,8%	38,8%	43,4%	47,2%	67,7%
	highly relevant	13,8%	26,9%	20,5%	18,1%	12,9%
Procurement initiatives (n=235)	not at all relevant	3,4%	11,9%	6,0%	5,6%	9,7%
	somewhat not relevant	24,1%	22,4%	26,5%	26,4%	32,3%
	somewhat relevant	34,5%	29,9%	39,8%	41,7%	35,5%
	highly relevant	20,7%	10,4%	9,6%	9,7%	16,1%
Support for measurement and testing services (n=267)	not at all relevant	17,2%	9,0%	3,6%	2,8%	3,2%
	somewhat not relevant	31,0%	28,4%	32,5%	25,0%	38,7%
	somewhat relevant	20,7%	41,8%	39,8%	51,4%	41,9%
	highly relevant	20,7%	13,4%	18,1%	15,3%	9,7%
Support for scale-up firms (n=255)	not at all relevant	10,3%	7,5%	3,6%	6,9%	9,7%
	somewhat not relevant	13,8%	19,4%	26,5%	36,1%	25,8%
	somewhat relevant	31,0%	40,3%	43,4%	25,0%	48,4%
	highly relevant	34,5%	23,9%	15,7%	15,3%	12,9%
Support for start-ups (n=269)	not at all relevant	3,4%	7,5%	4,8%	15,3%	6,5%
	somewhat not relevant	13,8%	14,9%	16,9%	27,8%	16,1%
	somewhat relevant	20,7%	41,8%	51,8%	25,0%	41,9%
	highly relevant	62,1%	34,3%	19,3%	19,4%	32,3%
Government programs addressing large societal challenges (n=261)	not at all relevant	17,2%	11,9%	7,2%	4,2%	3,2%
	somewhat not relevant	27,6%	20,9%	24,1%	19,4%	22,6%
	somewhat relevant	31,0%	34,3%	45,8%	43,1%	38,7%
	highly relevant	24,1%	22,4%	13,3%	22,2%	29,0%

Table 31: Please assess the relevance to your company of the following public policy initiatives regarding your innovation activities. (by sector)

		Agro- food (n=30): Column N %	Bio- pharma (n=27): Column N %	Clean- tech (n=36) : Column N %	ICT (n=55): Column N %	Manuf- acturin g (n=150): Column N %	Other sectors (n=10): Column N %
Initiatives to improve education and skills	not at all relevant	6,7%	0,0%	5,6%	5,5%	2,0%	0,0%
	somewhat not relevant	10,0%	11,1%	5,6%	7,3%	8,0%	10,0%
	somewhat relevant	46,7%	40,7%	50,0%	40,0%	34,0%	20,0%
	highly relevant	36,7%	48,1%	36,1%	41,8%	56,0%	70,0%
Reduction of barriers for labour mobility	not at all relevant	13,3%	11,1%	11,1%	10,9%	6,0%	20,0%
	somewhat not relevant	20,0%	14,8%	19,4%	18,2%	21,3%	20,0%
	somewhat relevant	33,3%	51,9%	44,4%	45,5%	43,3%	40,0%
	highly relevant	23,3%	11,1%	16,7%	18,2%	22,7%	20,0%
Grants	not at all relevant	6,7%	3,7%	2,8%	3,6%	2,7%	0,0%
	somewhat not relevant	10,0%	11,1%	5,6%	27,3%	15,3%	0,0%
	somewhat relevant	30,0%	22,2%	30,6%	30,9%	45,3%	80,0%
	highly relevant	46,7%	63,0%	55,6%	34,5%	32,0%	20,0%
Loans	not at all relevant	6,7%	14,8%	5,6%	10,9%	8,7%	10,0%
	somewhat not relevant	33,3%	22,2%	27,8%	38,2%	23,3%	40,0%
	somewhat relevant	36,7%	33,3%	33,3%	36,4%	44,0%	40,0%
	highly relevant	13,3%	25,9%	27,8%	9,1%	18,7%	20,0%
Fiscal incentives	not at all relevant	6,7%	7,4%	5,6%	9,1%	2,0%	0,0%
	somewhat not relevant	23,3%	11,1%	8,3%	16,4%	12,7%	20,0%

		Agro- food (n=30): Column N %	Bio- pharma (n=27): Column N %	Clean- tech (n=36) : Column N %	ICT (n=55): Column N %	Manuf- acturin g (n=150): Column N %	Other sectors (n=10): Column N %
	somewhat relevant	26,7%	40,7%	41,7%	36,4%	46,0%	30,0%
	highly relevant	40,0%	37,0%	36,1%	30,9%	34,7%	40,0%
Initiatives to facilitate the provision of venture capital	not at all relevant	6,7%	11,1%	11,1%	7,3%	6,7%	10,0%
	somewhat not relevant	40,0%	18,5%	11,1%	30,9%	28,7%	10,0%
	somewhat relevant	36,7%	29,6%	27,8%	32,7%	37,3%	50,0%
	highly relevant	10,0%	29,6%	36,1%	12,7%	10,7%	10,0%
Technology foresight initiatives	not at all relevant	0,0%	0,0%	2,8%	1,8%	1,3%	10,0%
	somewhat not relevant	10,0%	18,5%	13,9%	16,4%	17,3%	30,0%
	somewhat relevant	50,0%	25,9%	47,2%	50,9%	48,7%	50,0%
	highly relevant	30,0%	40,7%	27,8%	27,3%	29,3%	20,0%
Promotion of science-industry links	not at all relevant	0,0%	3,7%	0,0%	3,6%	0,7%	10,0%
	somewhat not relevant	13,3%	14,8%	5,6%	18,2%	14,0%	10,0%
	somewhat relevant	50,0%	25,9%	58,3%	45,5%	49,3%	40,0%
	highly relevant	33,3%	51,9%	36,1%	27,3%	30,7%	50,0%
Support for new standards	not at all relevant	3,3%	7,4%	0,0%	1,8%	4,0%	0,0%
	somewhat not relevant	23,3%	29,6%	33,3%	29,1%	21,3%	10,0%
	somewhat relevant	40,0%	11,1%	38,9%	49,1%	52,0%	60,0%
	highly relevant	23,3%	33,3%	25,0%	18,2%	15,3%	40,0%

		Agro- food (n=30): Column N %	Bio- pharma (n=27): Column N %	Clean- tech (n=36) : Column N %	ICT (n=55): Column N %	Manuf acturin g (n=150): Column N %	Other sectors (n=10): Column N %
Procurement initiatives *	not at all relevant	6,7%	7,4%	8,3%	5,5%	8,7%	20,0%
	somewhat not relevant	33,3%	33,3%	22,2%	23,6%	25,3%	30,0%
	somewhat relevant	33,3%	25,9%	38,9%	34,5%	42,0%	10,0%
	highly relevant	10,0%	7,4%	16,7%	16,4%	10,7%	20,0%
Support for measurement and testing services	not at all relevant	6,7%	7,4%	8,3%	9,1%	2,7%	10,0%
	somewhat not relevant	43,3%	25,9%	30,6%	41,8%	26,0%	30,0%
	somewhat relevant	23,3%	25,9%	33,3%	34,5%	48,0%	70,0%
	highly relevant	16,7%	25,9%	19,4%	7,3%	18,7%	0,0%
Support for scale-up firms	not at all relevant	10,0%	0,0%	5,6%	7,3%	5,3%	10,0%
	somewhat not relevant	30,0%	18,5%	22,2%	21,8%	26,7%	30,0%
	somewhat relevant	26,7%	22,2%	41,7%	47,3%	38,7%	40,0%
	highly relevant	26,7%	29,6%	19,4%	14,5%	20,7%	30,0%
Support for start-ups	not at all relevant	3,3%	0,0%	5,6%	3,6%	10,7%	0,0%
	somewhat not relevant	23,3%	14,8%	27,8%	20,0%	15,3%	30,0%
	somewhat relevant	26,7%	29,6%	36,1%	36,4%	41,3%	30,0%
	highly relevant	43,3%	44,4%	25,0%	40,0%	26,0%	30,0%
Government programs addressing large societal challenges	not at all relevant	6,7%	18,5%	2,8%	3,6%	8,0%	10,0%
	somewhat not relevant	10,0%	7,4%	11,1%	29,1%	25,3%	30,0%

		Agro- food (n=30): Column N %	Bio- pharma (n=27): Column N %	Clean- tech (n=36) : Column N %	ICT (n=55): Column N %	Manuf acturin g (n=150): Column N %	Other sectors (n=10): Column N %
	somewhat relevant	50,0%	33,3%	41,7%	29,1%	42,7%	50,0%
	highly relevant	30,0%	25,9%	33,3%	34,5%	14,7%	10,0%