



H E K A T E

**Higher Education and Enterprises:
Knowledge Alliances for the Training of Entrepreneurs**

**Lifelong learning programme
ERASMUS – Knowledge Alliances**

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Executive summary

HEKATE (Higher Education and Enterprises: Knowledge Alliances for the Training of Entrepreneurs) is a project funded by the European Commission's Directorate General for Education and Culture (DG EAC), as part of the Lifelong Learning *Knowledge Alliances* Programme. The goal of HEKATE is to develop knowledge alliances in the form of providing a means for experienced managers of new business development in technology based industries to become involved in inspiring early career researchers and scientists to become more innovators and entrepreneurs. One aspect of the project was to develop, assess and compare new models of workshop based teaching and learning, which are the subject of this report. The project has been delivered by a collaboration between two HEIs (UNIMAN in the UK and TUHH in Germany), TuTech, EIRMA and industry partners. This report discusses the unique value of HEKATE workshops delivered at the two partner HEIs, and identifies lessons learnt through the experiences and challenges encountered in developing innovative entrepreneurial training and learning programme co-developed between higher education and industry.

HEKATE designed and delivered workshop-based models of “learning in tandem” where university staff, students, researchers, companies and individual entrepreneurs are able to share their experiences and insights bringing together a variety of industry contexts. All workshops involved senior academics and R&D managers from industry. Participants were expected to develop entrepreneurial ideas and enterprising skills throughout different business stages within both company and academic settings. Managers from companies together with teaching staff of the HEIs served as trainers. Each of the workshops was observed by the partner HEKATE team, and of representatives of EIRMA for cross learning purpose.

The key workshop concept that the HEKATE team in Manchester developed was “**Enterprising scientists**”, aiming to influence attitudes and intentions of the participants – PhD students and post-doctoral researchers in sciences and engineering - towards entrepreneurship in a broad sense including their commercial ambitions and career development either in academia, large industry or starting a business. The workshop “**Turning Ideas into Business Opportunities**” was developed by the HEKATE team in Hamburg. The Hamburg workshop took an innovative approach in building mixed tandem-teams consisting of an industry practitioner and a university researcher. Each tandem-team worked on one business idea, either of a researcher or of a practitioner, thus benefiting from their professional experience and different working styles.

As a Knowledge Partnership model, HEKATE workshops demonstrated the additional value of industry engagement, in particular by bringing in EIRMA members, complemented by local industry contacts and co-developed learning resources. The workshops adopted Action Learning approach, including case studies, role plays, idea pitches and panel discussions.



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A set of key lessons can be derived from the workshop experience:

- *The entrepreneurship training should facilitate an open and interactive environment, where participants meet role models and guest speakers with experience relevant for their career choices; exchange their experiences, and build a sustainable peer network.*
- *Entrepreneurship training need to be adjusted and tailored to the specific needs of the participants, which helps provide better opportunities for participants to develop their entrepreneurial ideas and skills, motivate them to think and behave entrepreneurially, and increase the effectiveness of applied learning and networking.*
- *The entrepreneurship training workshop should provide an opportunity to develop and practise key 'soft' (personal) skills e.g. communications, influencing, team working, presentation, story-telling and pitching skills.*

The tandem models benefited by combining new stimuli from expert sessions and the participants' entrepreneurial developments. If carefully matched according to their experiences and areas of expertise, industry-science tandem models developed through the HEKATE workshops have a high likelihood to continue cooperation after the workshop. This would carry the idea of knowledge partnerships beyond the HEKATE programme.

Finally, in order to deliver a successful knowledge partnership, relationship building between higher education and industry needs to be started well in advance and maintained continuously. Recruitment of experienced practitioners for the activity needs to be an on-going process. The platform built up by EIRMA during the project could facilitate this process in the future.



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1. Introduction

HEKATE (Higher Education and Enterprises: Knowledge Alliances for the Training of Entrepreneurs)¹ is a project funded by the European Commission's Directorate General for Education and Culture (DG EAC), as part of the Lifelong Learning *Knowledge Alliances* Programme. The idea for Knowledge Alliances emerged from the Commission's University–Business Forum. Their aim is to encourage structured, outcome-driven cooperation between higher education institutes (HEIs) and companies. HEKATE addresses the desire to foster an interest in entrepreneurship amongst scientists by encouraging R&D managers in research intensive industries and university research scientists to become more pro-actively engaged with each other. The HEKATE partnership consists of: the European Industrial Research Management Association (EIRMA), Solvay and TechBridgeOne as industrial partners; Hamburg University of Technology (TUHH) and Manchester Business School, the University of Manchester (UNIMAN) as HEI partners to translate this collaborative relationship into a scheme for entrepreneurship training for early career researchers and doctoral students. The partnership has been coordinated by TuTech Innovation, the knowledge transfer arm of TUHH.

Entrepreneurial training and learning impacts on individuals, organisations, the economy and society. Entrepreneurial training and learning are considered to be vital enablers for economic growth through the development of enterprise and innovation activities, which may lead to the creation of jobs. Universities provide entrepreneurship training and enterprise educational activities aiming to inspire students' future careers and build entrepreneurial skills and competences. There are a number of ideas for ways in which companies get involved in such learning processes. HEKATE has developed models of “learning in tandem” where university staff, students, companies and individual entrepreneurs are able to share their experiences and insights bringing together a variety of industry contexts. The HEKATE partners have tested these models in two different higher education environments.

The cornerstone of HEKATE was delivery of entrepreneurship training workshops for mixed groups of early career academic researchers and industry practitioners with technical backgrounds. HEKATE developed novel workshops enabling the interaction between

¹ See: hekate-project.eu



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experienced R&D managers, university lecturers and early career researchers and students. A series of four workshops were delivered – two each in Manchester and in Hamburg. The first set of two workshops was developed and delivered in the autumn of 2014, and was seen as a ‘pilot’. Based on the feedback of the participants in each, and the observations of the trainers and the HEKATE project team, the workshops were slightly adapted before re-delivery in the second round 6 months later. Original case studies for entrepreneurship training were developed through the close collaboration between industry and academia.

This report describes the experiences of designing, developing and delivering these four HEKATE workshops, and assesses these experiences. The report discusses the value brought by the HEKATE collaboration – between the two HEIs, EIRMA and industry partners and identifies lessons learnt through our experiences and challenges encountered. The aim of the report is to pass on experiences to other HEIs similarly addressing the need to engage with research students and early career researchers on the notion of entrepreneurship.

Following this short Introduction, the next section explains the background of the HEKATE concept – why we decided to focus on the specific target groups, the ways in which we aspired to work with industry. The Third Section provides the detailed processes of workshop developments throughout 2014 and 2015 at the University of Manchester (UNIMAN) and Hamburg University of Technology (TUHH). Section Four analyses and assesses the outcomes of the four workshops drawing on multiple sets of evidence, identifying benefits to a variety of partners and stakeholders. Section Five reflects upon the workshop experiences and models for sustainable knowledge partnerships. The report concludes with lessons learnt from the experiences of the four workshops and recommendations for the future.



2. Background

2.1 Setting the scene – project imperatives

Entrepreneurship has been long considered as a key factor for economic growth and social transformation, and the roles that higher education institutions (HEIs) play in developing the entrepreneurial activities have been attracting both policy and scholarly attentions in many countries. The recent decade has witnessed an increase in the number of HEIs using their initiatives to stimulate enterprise and entrepreneurship, and this is driven, at least in part, by the growing recognition of an association between the students 'entrepreneurship' experiences at HEIs and the impact on the wider economy (e.g. European Commission, 2015).²

There is also a growing international interest in turning scientific ideas and inventions into income and jobs, and in creating better career opportunities for researchers. Developing skills in researchers and businesses, utilising research based knowledge in an industry context, and turning ideas and skills into commercial success are seen as essential. In this light, research training, particularly doctoral training is seen as a priority in many countries. Thus the focus of the HEKATE project is doctoral early career stage researchers. HEIs on the other hand find it difficult to convey entrepreneurship skills. The nature of entrepreneurship is such that it does not lend itself to pure academic based teaching. Nor are skills transferred if simply charismatic entrepreneurs tell their life stories.

On 9 January 2013 the Commission published an Entrepreneurship Action Plan.³ It is reported that in recent years the percentage of people seeking to form their own business has declined, and Europe lags behind major competitors in its entrepreneurial attitudes, while at the same time it is acknowledged that the main source of jobs in Europe is in Small and Medium Enterprises (SMEs). The Action Plan sets out a Blueprint based on three key points for intervention:

1. *Entrepreneurial education and training to support growth and business creation,*
2. *Create an environment where entrepreneurs can flourish and grow, and*
3. *Role models and reaching out to specific groups.*

² European Commission (2015) Entrepreneurship Education: A road to success, January 2015. http://ec.europa.eu/growth/tools-databases/newsroom/cf/itemdetail.cfm?item_id=8056&lang=en accessed 1 June 2015

³ European Commission (2013) *Entrepreneurship 2020 Action Plan* http://ec.europa.eu/enterprise/policies/sme/entrepreneurship-2020/index_en.htm, accessed 1 June 2015



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Under Point 1, there is a recommendation that ‘Education should be brought to life through practical experiential learning models and experience of real-world entrepreneurs’. Under Point 3, the recommendation is to ‘change the perception of entrepreneurs through practical and positive communication’.

Changing deep-rooted mind-sets is a challenge. Educators of enterprise and entrepreneurship are likely to experience challenges to meet increased and wider demands from policy communities, as well as meeting demands from students at different life and career stages, who are from a broad range of disciplinary backgrounds, and who have varied and diverse career as well as life aims and objectives.

One of the most effective methods of enterprise and entrepreneurship education seems to be to identify *role models (people)* and sharing experiences of entrepreneurs - successful, and even unsuccessful stories of creating and developing their business ventures. Involving key people in enterprise and entrepreneurship education from industry who are willing to collaborate with academia is the key. However, doing this in a systematic and sustainable way is often seen as problematic. Knowledge Partnerships can provide one possible model for such collaboration. A prerequisite for such collaboration is the means to bring people together.

2.2. HEKATE Objectives and Partners

The challenges identified above match the objectives of HEKATE. HEKATE aimed to support the spread of knowledge alliances to foster entrepreneurship by encouraging and enabling senior R&D managers in research intensive industries to become more pro-actively engaged with HEIs. While many programmes exist to encourage business start-ups, the key role that larger companies can play in encouraging entrepreneurship is often overlooked. European multinationals are leading the way in ‘Open Innovation’: they are significant funders of research at HEIs, they act as partners, customers and investors in SMEs; through promotion of intrapreneurship in their own organisations and not least by being active in corporate business venturing, supporting start-up ventures and commercially oriented behaviour of scientists in firms. Europe has excellent managerial competencies in multinationals, but it remains often an untapped resource when it comes to strategically fostering entrepreneurial skills in HEIs. Experienced R&D directors span both the world of research and business: individually and corporately they can be inspirational for students and



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researchers to engage in business creation. HEKATE seeks to explore how this can be developed further.

HEKATE aimed to build an open platform between industry and HEIs by identifying practical ways in which EIRMA could act as a meeting ground for HEIs seeking competent people and for experienced new business managers to offer their experience: to help develop sustainable Knowledge Partnerships both in this specific case, but also more generally. HEKATE is also designed as a pilot to explore new ways of delivering skills training in mixed groups of students, researchers and early career managers. For the participants themselves addressing the project on a European basis allows access to a broader range of experience and an opportunity to compare different European models and experiences, sharing for example different HEI approaches. It was designed to be an enriching project for all stakeholders and allow the Commission access to an array of practical experience.

HEKATE identified following key objectives -

1. To identify common issues and needs to establish cooperation between experienced innovation managers and experts in higher education to develop entrepreneurship training concepts for knowledge partnerships
2. To provide the means for R&D managers to be involved with higher education experts in providing training
3. To provide a review of the different forms of collaborative entrepreneurship training approaches that are currently offered at outstanding HEIs worldwide
4. To run a pilot moderated online discourse with students and academic researchers to find out their views on entrepreneurship training
5. To develop two novel and focussed entrepreneurship training workshop concepts that can be delivered efficiently, recognising the curriculum burden faced by many students.
6. To deliver these workshops and to assess their effectiveness
7. To provide the foundation for EIRMA and affiliated organisations to support R&D managers in becoming involved in knowledge partnerships to promote entrepreneurship on a wide basis across Europe
8. To provide some best practice examples for HEIs on how to establish knowledge alliances



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A small strategic international partnership was formed for this particular Knowledge Alliance. It included:

- **European Industrial Research Management Association (EIRMA)**, a membership-based organisation of over 120 companies with significant research and innovation activities in Europe. EIRMA provides access not only to highly competent innovation managers, but also an effective route to promote the Knowledge Alliance agenda across all of Europe, independent of any sector.
- **Hamburg University of Technology (TUHH)**, Germany's youngest technical university, founded in 1978. HEKATE team is based at the Institute for Marketing and Innovation, strongly engaged in research particularly focussing on entrepreneurship, and practising this within the home university;
- **The University of Manchester (UNIMAN)**, one of the largest research universities in the UK. The HEKATE team is based at Manchester Business School's, Manchester Institute of Innovation Research (MIOIR), an internationally renowned research institute with an extensive expertise and networks in the field of innovation and entrepreneurship research.

Together with

- **TuTech**, a mature knowledge transfer organisation with two decades of experiences of supporting business start-ups, formed as a limited company owned by TUHH and the City of Hamburg. Interactions between the HEKATE partners and the development of the training workshops were facilitated by TuTech.
- Industrial partners included **Solvay** and **TechBridgeOne** to act as industrial champions and catalysts for other companies to actively engage in the formation of Knowledge Alliances.
- Other industry partners were specifically engaged on an as-needed basis in the formation and delivery of the HEKATE workshops.

There has been close communication between the project partners and intensive exchange of observations on each other's workshops. Reflections and exchange of experiences between HEIs, industrialists and policy makers have been supported through a Round Table held at the mid-point of the project in September 2014 involving representatives of the Commission, industry, higher education as well as the project team.⁴ A final conference for

⁴ Roundtable: 'New Ways to foster a European entrepreneurial spirit through knowledge partnerships'; Report on workshop experiences giving recommendations.



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the project permits the experiences to receive wider dissemination. EIRMA is incorporating the key outcomes to an operational plan to take the HEKATE experiences forward to its members.



3. Workshop Development

3.1. HEKATE Work package Structure

The HEKATE project was organised into four phases. The formation phase (until September 2014) consisted of the review on existing entrepreneurship trainings, a moderated online discourse on entrepreneurship, the development of the workshop concept and the building of relationships towards industry contributors. It was followed by the Workshop Delivery phase (May 2014-Apr 2015) which comprised the fine-tuning of the workshop contents and the promotion, delivery and assessment of the workshops. The Reflection phase (September 2014 - July 2015) includes this report on the workshop experiences giving recommendations as well as an EIRMA roundtable discussion on knowledge partnerships and entrepreneurship training. Transportation to wider community (July 2015 - December 2015) will conclude the HEKATE project by the means of a conference and a final public report.

Review on Existing Entrepreneurship Training (December 2013-March 2014)

As a starting point the state of the art of entrepreneurship training both in industry and higher education sectors was identified and delivered in an early phase of the HEKATE project. The TUHH team led this task and conducted a study in early 2014 over a three months period. This study consisted of three parts. Firstly, in order to understand general demands and drivers in entrepreneurial training, a review of the available entrepreneurship training programmes was made. This was mostly carried out by desktop data collection. Secondly, in order to gain more specific information about the contents of the training programmes, interviews with companies and HEIs providing entrepreneurship training were conducted. Thirdly, based on the analysis of the data from the review and interviews, the gaps and potential demands in entrepreneurial training were identified. These were reflected in recommendations for the entrepreneurship workshop targeted at academic researchers and early career industry professionals with technical backgrounds.



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Table 1 Review on existing entrepreneurship training - activity plan

	Dec. 2013 - Jan. 2014	Feb. 2014	Mar. 2014
Activity	Research on available training offers	Interviews	Interviews (cont.) Analysis
Methodology	Data collection Handouts for EIRMA meeting	Questionnaire design Direct contact Phone interview	Literature review Data analysis Recommendations for the workshop design
Outcome	Review	Interviews minutes	Final report

The details of the review as well as analysis and recommendations are documented in the Report D2.1 on Existing Entrepreneurship Approaches⁵ and open for public view.

Moderated Online Discourse on Entrepreneurship (January 2014- June 2014)

HEKATE aimed to “run a pilot moderated online discourse with students and academic researchers to find out their view on entrepreneurship training” to test the usability of this novel tool for Higher Education modules in a small scale. This is based on the objectives of the HEKATE programme – “to build an open platform between industry and HEI” and to pilot this concept via an innovative online platform at the University of Manchester as a local environment. In terms of the actual promotion of the online exercise and engaging with participants, the pilot online exercise encountered difficulties. Due to the extensive information on entrepreneurship already sent electronically and frequent online surveys, university researchers tend not to engage with “online discussion” of an open nature unless they are directly related to their own interest and offering immediate value for the engagement. Instead, for doctoral students, face-to-face interactions with recent PhD graduates provided an ideal process to ask questions and share their concerns about their research careers and possible industry careers. The HEKATE team gained insights into the needs of entrepreneurial training through face-to-face interactions with the students, academic staff and business development team, which became the basis of the workshop design, rather than through the communication using the online moderation.

⁵ Report D2.1 can be downloaded from: hekate-project.eu



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Table 2 Online discourse and open platform tool - activities and outcomes

	Prior to HEKATE	Jan-April 2014	May-June 2014
Activities	Online discourse platform developed at TUHH/TuTech	Online discourse platform Redesigned for the Manchester context;	Implementation of the On-line discourse platform; Enterprise and Career events for research students
Methodology	Data collection within TUHH about the development of new entrepreneurship activities	Contacts with Schools; Search for online facilitators; Search for industry contributors	Online discourse platform open for 2 weeks with facilitators; Participant observation at the enterprise and career events between industry and students
Outcome	Data collection done but hard to achieve high participation.	“enterprising scientist” concept developed	Registrations from PhDs and academic staff but Online platform not successful; Physical events are interactive, and positive feedback received.

The online platform structure, whilst it had been shown to be effective in other contexts, including at the TUHH for an online discourse with students on the topic of entrepreneurial training, would need adjustment for each specific purpose and environment. Face-to-face interactions worked much better in order to identify the needs and perceptions of research students and early career researchers at the University of Manchester. One of the conclusions of the Report on the Moderated Online Discourse⁶ is that an online discussion would be more effective if it were integrated as part of the workshop design and contents, and as a follow up to the workshop, with direct benefits to those who participate. Providing a template for an online interaction may be helpful for HEIs with limited experiences of entrepreneurship training, but it has to be tailored with the contexts of individual HEIs and the specific target groups.

⁶ Report on Moderated Online Discourse can be downloaded from: hekate-project.eu



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Workshop Delivery (May 2014- April 2015)

The framework for the delivery of four workshops comprises:

- Promotion of the workshops
- Implementation of workshops co-moderated by members from industry and HEIs
- Assessment of workshops individually and in comparison
- Adjustment and delivery of the modified workshops
- Final evaluation and assessment

All workshops involved senior academics and R&D managers from industry. Participants were expected to develop entrepreneurial ideas and enterprising skills within both company and academic settings. Based on the workshop concepts and recommendations developed through earlier work packages, training experiences and, needs and insights gained through a variety of channels, the first set of workshops in Manchester and Hamburg was designed in the earlier part of 2014, and delivered in the autumn in 2014, and re-delivered in the spring in 2015 after some adjustments and improvements. Managers from companies together with teaching staff of the HEIs served as trainers. Each of the workshops was observed by the partner HEKATE team, and of representatives of EIRMA for cross learning purpose.

The workshops were promoted at both host universities as well as more widely using European wide existing databases (e.g. utilising networks such as TuTech's existing complementary skills mailing database established through REMAT and similar workshops). All four workshops were assessed based on feedback questionnaires developed for the HEKATE workshops. After the first set of workshops, modifications and amendments were made in the concept and the workshop design drawing on the feedback and assessment from the participants. The second run of the workshops was delivered in early 2015, followed by the final assessment. The following sections in this report illustrate these processes and assessment in detail.

3.2. Workshop Concept Development

The background concept of the HEKATE workshops was derived from the experiences of the HEKATE team and contributors, as well as from recommendations summarised in the Report D2.1 on Existing Entrepreneurship Approaches (see above). The following key principles became the basis of the HEKATE workshop concept development:



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1. **Open and interactive nature** - A shift of emphasis in entrepreneurship education and training has been observed. The nature of entrepreneurship training is moving towards more open and interactive. In order to bring such training environment, a new framework is needed, where students and academic researchers are exposed to real-world situations by interacting with industry experts and successful entrepreneurs.

2. **Customised and active learning** - Elements of active and experiential learning in combination with personalised approaches are widely used and considered to be effective forms of entrepreneurship training for academic researchers and managers. Entrepreneurship training is becoming more customised and highly-dependant on the group of participants, industry sectors and individual demands. In other words, a training content should allow facilitators to bring learning closer to a professional experience of an individual. Action learning is critical for shaping participants' behaviour.

3. **Importance of soft skills** - An entrepreneurship workshop should also provide training in certain soft skills. Industry collaborators pointed out to the HEKATE team that effective communication and presentation skills are essential for today's engineers - engineers starting their careers today must go beyond their academic backgrounds. Therefore, soft skills should be taught in addition to other, more formal topics of entrepreneurship.

In short, an effective entrepreneurship training should have an interactive nature and implement real-world business situations. At the same time, to make entrepreneurship training useful for future application, it should be designed around the individual's experience and have a direct impact on their work and aspirations.

Table 3 summarises the key principle on teaching methods and training facilitation approaches adopted in the HEKATE workshop concept and structure.

Table 3 Principles and methods of the HEKATE workshop

Goal	Facilitating interactions and communication between researchers and early career engineers, across academia and industry
Teaching and learning principles and methods	<ul style="list-style-type: none"> - Action learning and experiential learning (pitching, role-playing, solving real case problem, guest speakers) - Peer learning (group work, discussions, feedback) - Personalised learning (application to own research and work fields)
Team building	Mixed multidisciplinary teams
Training facilitation	Teaching, coaching, role models, case studies



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The workshop structures and contents adopted an experience-based learning format. Additionally, the workshops aimed to fill the gaps in soft skills of early career engineers and academic researchers. The HEKATE workshop concept was designed around *interaction* and *communication*, in particular: *learning how to interact with different stakeholders*, and *bringing a message to the targeted audience in a precise way*. This can be done through various methods including, role-play, pitch training, Q&A sessions, group discussions and networking with external industry experts and entrepreneurs.

3.3 Workshop Contents and Delivery

Based on the results of the initial concept development phase, the concepts for the first two workshops were further refined. The workshops were delivered in Manchester and Hamburg in the autumn of 2014. Each university took a leading role in the organisation of the respective workshop. This included design of the agenda, selection process of participants and team building as well as facilitation of the workshop. Each partner of the HEKATE team was invited to join the workshops as observer and/or contributor. The first workshop in Manchester “**Enterprising Scientists: Generating Value and Opportunities**” took place on 28-29 October 2014. The second workshop in Hamburg “**Turning Ideas into Business Opportunities**” took place on 26-28 November 2014.

Although the two workshops had slightly different learning objectives, there are some similarities in learning approaches and workshop formats. The key objectives of the Manchester workshop were to influence attitudes and intentions of the participants towards entrepreneurship in a broad sense including their commercial ambitions and career development. The key aim of the Hamburg workshop was to strengthen the entrepreneurial drive and the innovation skills among participants from both industry and academia by developing business ideas and identifying opportunities.

Based on the feedback and evaluation of the first set of the two workshops (see Section 4), the second set of workshops were developed in Manchester and Hamburg respectively and delivered within six months after the first workshops - in March and April 2015.



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Table 4 Four HEKATE Workshops: Dates and venues

Workshop	Date	Venue
“Enterprising Scientists: Generating Value and Opportunities”	28 – 29 October 2014	Harold Hankins Building, MBS, Booth Street West M13 6PB, Manchester, UK
“Turning Ideas into Business Opportunities”	26 - 28 November 2014	TuTech Innovation GmbH, Harburger Schlosstr. 6 –12, 21079 Hamburg, Germany
“Enterprising Scientists: Developing Value and Opportunities”	24-25 March 2015	Harold Hankins Building, MBS, Booth Street West M13 6PB, Manchester, UK
“Turning Ideas into Business Opportunities”	6-8 April 2015	TuTech Innovation GmbH, Harburger Schlosstr. 6 –12, 21079 Hamburg, Germany

All four workshops followed experience-based learning approach allowing participants to develop entrepreneurship awareness and transferable skills. Furthermore, learning was facilitated through interactive sessions with industry speakers and real industry case studies co-developed with senior managers from industry collaborators. Finally, participants of the two workshops were expected to learn about entrepreneurship opportunities in academic and company settings as well as strengthen their entrepreneurial drive in their own career development.

In the next sections, the processes of design, delivery and improvement of workshops at both Manchester and Hamburg are presented. The characteristics of the each of the HEIs, the existing entrepreneurial training and activities are described as background contexts. Then the targeted participants of the HEKATE workshops (20-25 participants in each of the workshops), the structure, contents and activities of each of the workshops are explained. The incremental changes made following the first set of workshops are then detailed. For the actual programmes of the four workshops, please refer to the Appendix.



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3.3.1 HEKATE workshops in Manchester

The key workshop concept that the HEKATE team in Manchester developed is “**Enterprising Scientists**”. The University of Manchester is one of the largest research-intensive universities in the UK with already well-developed and complex entrepreneurial learning environments. The HEKATE project provided an opportunity to collaborate with European industry and higher education partners. Our aim was to inspire and excite the workshop participants to be “enterprising scientists” in their careers, be that in a university, a global multi-national enterprise, small and medium enterprise, or as the founder of a start-up.

The University of Manchester Entrepreneurial Ecosystems

In designing and delivering the HEKATE workshops, the HEKATE team collaborated with a number of key actors engaged in the enterprise and entrepreneurship education and related activities already existing at the University. The University of Manchester has been actively engaging with the Enterprise agenda over the past decade through Manchester Enterprise Centre (MEC), which provides enterprise and entrepreneurship education and related activities.⁷ MEC is based within Manchester Business School at The University of Manchester, and has collaborated closely with the HEKATE team. MEC’s activities include both curricular and non-curricular ones, such as business competitions, Enterprise Summer School, workshops targeting PhD students on innovation and commercialisation of research. The other key vehicle of the University’s enterprise training and activities is through UMI3, formerly University of Manchester Intellectual Property (UMIP) and University of Manchester Innovation Centre (UMIC). The University has supported the commercialisation of its Intellectual Property (IP) over the past 20 years, and more than 100 spin-out companies have been generated. The Career services unit of the University is another important player for the research students’ employability and career development. The HEKATE team also consulted the Business Engagement Unit of the University in order to identify industry partners.

Targeted participants of the HEKATE workshops

The student number is approximately 38,430 according as of 2014. Postgraduate research student population amounts to 3,450, about one third of which is overseas students from outside the EU. The target population under the HEKATE project is doctoral research

⁷ MEC was launched in 2000 with funding from the UK Government’s Science Enterprise Challenge Fund.



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students and early career post-doctoral researchers specialised in Engineering and Science fields, including three faculties:

- Engineering and Physical Sciences (EPS)
- Faculty of Life Sciences (FLS)
- Medical and Human Sciences (MHS)

In consulting the units engaged in enterprise training activities at the University as identified above, the post-doctoral researchers were specifically included as a target of the HEKATE workshops at University of Manchester. There is an increasing recognition that entrepreneurship training is needed for post-doctoral researchers for their career development, whilst there was no specific provision for this group. The majority of the participants was from the University of Manchester, with a mixed balance of gender and international backgrounds. About half of the participants were doctoral researchers and another half being post-doctoral early career researchers with an average of two years of postdoctoral experiences. The workshop was also advertised at through European HEIs which led to a couple of participants from Germany and Switzerland. There was no prior prerequisite for the workshop participation, whilst all the participants demonstrated either interest in career in industry or research collaboration with industry, including a few who demonstrated focused interest in start-ups from their technology. Some of the participants had had working experiences in industry.

Concept and delivery of the First Manchester workshop

The key workshop concept that the HEKATE team in Manchester developed is “**Enterprising Scientists**”. We wanted to highlight the spectrum of enterprising career opportunities for STEM researchers, and also the mobility and links between different sectors throughout their careers.

Enterprising Scientists		
Academic entrepreneur building enterprising academic career at the University e.g. University spin-offs; industry collaborations	Scientific/Tech entrepreneur – starting-up firms; working in industry, sometime between the university and industry	Intrapreneur working in R&D/innovation within corporate organisations

Figure 1 Conceptualisation of “Enterprising scientists”



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The contents of the first workshop were built surrounding the theme of “Enterprising Scientists: Generating Value and Opportunities”. The workshop was designed as an intensive and interactive two-day non-residential event organised by Manchester Business School – jointly run by the Manchester Institute of Innovation Research (MIOIR) and Manchester Enterprise Centre (MEC). Drawing on the existing non-curricular training activities in enterprise and entrepreneurship, the workshop structure involved both structured talks and participatory and interactive hands-on activities. Invited speakers include enterprising scientists from academia, including a mid-career scientist and a senior leader (Associate Dean), local start-up communities and EIRMA member companies, including those who moved between academia and industry in their career, providing “role models” for doctoral and early career researchers, who were considering careers in different environments.

Establishing the links with industry speakers, especially senior managers, was one of the challenges. We used a number of channels, including the University’s Business Engagement Unit, Career Services, and personal contacts and networks. One of the HEKATE team members (Dr Phil Gamlen) provided useful contacts with senior industry managers and entrepreneurs, who agreed to speak at the workshop. Dr. Gamlen acted as a key facilitator for the first workshop, which helped build learning experiences through the HEKATE team. Developing case study materials with a delegate from Solvay Ventures proved to be a new challenge, which enhanced dialogue with the industry senior manager and academic staff. For example, there were quite a few phone calls and discussions, which helped managing the industry speaker’s expectation of participants’ levels of awareness of industry contexts, and learning how to design the industry case studies to be delivered in a short interactive session.

Content of the workshop

The first day consists of an “ice breaking” exploration of innovation and a series of guest talks from Enterprising Scientists, including academia, a start-up and venture perspectives. One of the sessions provided the participants with the framework of developing business ideas and commercialisation of knowledge, so that the participants could share understanding of the enterprise and entrepreneurial processes through undertaking a variety of group activities.



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Building on the first day, the second day contained more interactive activities. The facilitation by one of the HEKATE team helped move on to the second day, starting from a panel session on enterprise career development. Three panellists providing different role models – one academic developing spin-out firms, a Medi-tech entrepreneur with background in academic research now based in Manchester Science Park, and a corporate senior manager with background in science with experiences in managing R&D and human resources – shared their views on careers and skills required for various models of enterprising careers as scientists. The interactions between the participants and panel members were highly energetic, and each panel members provided complementary perspectives to each other.

This is followed by “industry case studies” developed in collaboration with the EIRMA member company, using the real case studies based on corporate venturing strategies. The participants were divided into groups and developed their own scenarios of technology commercialisation and market opportunities. Participants worked as a small group on case studies based on real industry experiences where they were asked to identify and develop enterprise and business opportunities. The EIRMA industry contributor provided facilitation support to the groups. The role-play session on stakeholder management made the participants face the complex processes and decision making which they might encounter in the enterprise development and business growth. The final session brings the two-day session together, including discussion amongst the participants about the next step, identifying available resources and support mechanisms within the Manchester context and beyond. Future needs of the participants were identified, including a dedicated session on intellectual property management and learning the reality of the entrepreneurial start-ups. For the University of Manchester participants, specific information was given where they could find further support for entrepreneurial activities. The details of the two-day workshop structure are presented in Annex.



Table 5 Structure of the Manchester workshop

Day 1
The Enterprising Scientist <ul style="list-style-type: none">- Experiences from academia, a large corporation and a high-tech SME- The Entrepreneurial Commercialisation of Knowledge- Views from practitioners
Day 2
Enterprise in Career, Contexts and Practice <ul style="list-style-type: none">- Special Panel Session: The Enterprising Scientist – making a career with enterprise- From Idea to Reality – industrial case studies (EIRMA contribution)- Stakeholder Management

Outcomes of the First Workshop

The first workshop aimed to test the concept and contents of the approach, and also to test the scalability of the workshop. In terms of the workshop concept and structure, the feedback from the participants was very positive (see Section 4 and Annex). The overall structure and concept of the workshop proved to be robust and remained the same in the second workshop.

There was also unexpected impact of the workshop. After the HEKATE workshop, a group of participants independently arranged to visit one of the workshop speakers – a scientific entrepreneur based at the Manchester Science Park. The HEKATE workshop’s interactive activities facilitated the further learning opportunities amongst the participants and the local industry contributor. Two of the industry contributors offered to speak again at the second workshop as they appreciated the positive experiences of interacting with the participants. The first workshop received very positive feedback – it looks as if the workshop managed to create the communities of “Enterprising scientists”.



Development of the Second workshop

The implementation of the second workshop was built on the experiences and lessons learnt from the first workshop. The title of the workshop was only slightly modified: “**Enterprising Scientists: Developing Values and Opportunities**”. A new set of participants was recruited for the second workshop. There are a number of lessons learnt for the HEKATE team as a whole, in terms of logistics, especially the promotion of the workshop and communication with industry. Promotion of the workshop within the University was much easier due to the already established linkages with the research manager at each of the Schools.

With regards to the industry contacts, the cumulative links with EIRMA companies and individuals helped. Some industry contributors from the first workshop came back to the second workshop, including a local tech entrepreneur and an experienced corporate R&D manager.

We managed to identify a new EIRMA company speaker who volunteered to participate after hearing about the HEKATE workshop through an EIRMA event. The contributor from Bekaert, who was early-mid career Innovation manager, provided an insight into the corporate world as well as a role model for the early career researchers who participated in the workshop. The focus of the industry speaker in the second workshop was on Innovation portfolio management followed by an interactive group business idea development with the industry manager facilitation.

Table 6 summarises the accumulative benefits from the first workshop and changes made to the second workshop based on the lessons from the first one.

Following the first workshop, we included a senior academic leader of the University, who has been a successful “academic entrepreneur” as a “role model” speaker. For the programme of the Second Workshop, see Annex.

One of the substantive development in the second workshop was a development of the “Stakeholder Management session” (see Section 3.4), which benefited from the cross-fertilisation between Manchester and Hamburg workshops and the sessions were delivered jointly between the Manchester and Hamburg members of the staff.



Table 6 Benefits from the first Manchester workshop and changes made to the second one

Industry contacts and communication	<ul style="list-style-type: none"> - One individual from EIRMA member company volunteered to speak at the second workshop following earlier communication with EIRMA - Two of the industry contributors from the first workshops volunteered to contribute to the second workshop
Workshop organisation	<ul style="list-style-type: none"> - Workshop structure and concept remained the same - New collaboration between Manchester and Hamburg for the Stakeholder Management session.
Learning material	<ul style="list-style-type: none"> - The Stakeholder Management session was restructured by having an original case developed by the Hamburg colleagues. - A new case was written, and the session was delivered as a team session by Manchester and Hamburg colleagues
Workshop Agenda	<ul style="list-style-type: none"> - The panel session on Enterprise Scientists was expanded - A gender balance of the contributors were considered
Training facilitation	<ul style="list-style-type: none"> - Elaboration of role play in the Stakeholder Management session

Results of the evaluation of the first and second Manchester workshops are found in Annex. See also **Section 3.4** about the overall workshop development throughout Manchester and Hamburg.

3.3.2. HEKATE workshop in Hamburg

The workshop “**Turning Ideas into Business Opportunities**” was intended for a mixed group of PhD students, early-stage researchers and early-career young professionals from industry in scientific and technical disciplines. The workshop involved senior academics and R&D managers anchoring learning experience of participants by coaching/training, lectures, classroom discussions, presentations and real industry case studies. Participants were expected to learn strategies and tools to pursue a business idea throughout different development stages within both company and academic settings. The aim was to strengthen the entrepreneurial drive and the innovation skills among participants.

TUHH Entrepreneurial Ecosystems

The main developer and organiser of the workshop in Hamburg has been Institute for Marketing and Innovation (IIM) of the TUHH with contribution of the TUHH Center of Entrepreneurship and Innovation, Startup Dock. The TUHH is organised as a “matrix



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structure” of research centres: professors belong to schools and research is done in nine interdisciplinary research centres. TUHH was the first public German university to found a private technology transfer company, TuTech, in 1992.

Enhancing the entrepreneurial output of the university is a key pillar of the universities strategy: the “TUHH Startup Dock” was founded in 2013 and aims at (1) strengthening the entrepreneurial culture on the campus, (2) integrating education and training into all study programs, and (3) bringing coaching, incubation and financing of new ventures to a new level. In January 2013, TUHH was one of 12 universities awarded with funding under the German Federal Ministry of Economics and Technology (BMW) for supporting entrepreneurship in German universities.

Developing the workshop concept

The concept of the workshop in Hamburg was developed on the basis of the review on entrepreneurship training (Report D2.1). Through series of interviews with HEIs and company representatives it was discovered that today’s graduates in engineering and science are required to go beyond their technical expertise and encouraged to be innovative in both, academic and business settings. Furthermore, entrepreneurial skills are crucial for exploiting the commercial potential of ideas and technologies – regardless whether it is to happen in an academic institution or in a technology-based company.

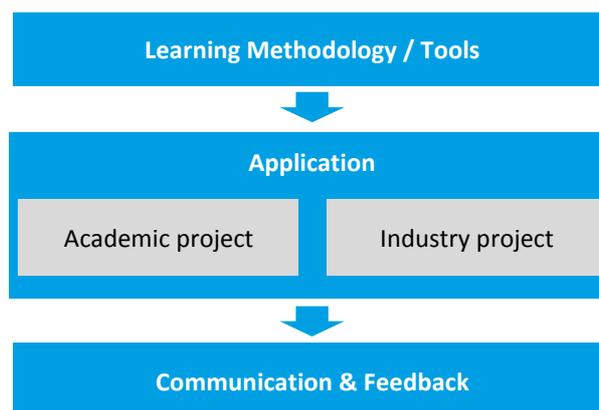


Figure 2 Framework of the workshop in Hamburg

As shown in Figure 2, the workshop followed a “methodology-application-feedback” framework. Learning practical tools and business methodologies participants develop their business ideas throughout the workshop. Such a framework aims at strengthening



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communication skills and at simulating business environment bringing participants closer to real business situations.

Furthermore, given the recommendations from the review on entrepreneurship training learning was facilitated with interactive elements such as: live classroom discussion with industry speakers, case studies, role plays and pitching to the jury panel.

The workshop took an innovative approach in mixing industry practitioners and academic researchers and building tandem-teams consisting of a practitioner and a researcher. Each tandem-team worked on one business idea, either of a researcher or of a practitioner, thus benefiting from their professional experience and different working styles.

Content of the workshop

The workshop lasted two and a half days starting with the networking dinner, where participants get to know each other, following with two days of intensive learning and resulting in a “pitching” session, where teams pitch their ideas to a jury panel consisting of industry experts, senior managers and entrepreneurs. The workshop offered tandem-team work as well as interactive group exercises and discussions. A detailed programme is presented in Annex.



Table 7 Content of the workshop in Hamburg

Day 1
Get to know each other Welcome and networking dinner
Day 2
Improve your idea, share with others and learn from real entrepreneurs <ul style="list-style-type: none">- Develop ideas: Use creativity techniques and benefit from team work- Speed up ideas: Learn how to analyse ideas quickly- Switch into realization: Learn from experts how to turn ideas into projects
Day 3
Learn business techniques, get coached and pitch! <ul style="list-style-type: none">- Create a business proposal: Apply evaluation tools and learn from professional evaluators- Pitch your idea: Train how to bring your case across- Evaluation and Feedback

The agenda of the workshop shown above was designed in such a way to develop an entrepreneurship spirit among participants; to train the use of business development tools and learn how to effectively deliver a message to different audience; as well as establish contacts with peers and get to know successful entrepreneurs, industry experts and senior managers from large multinational corporations.

Development of the Second Workshop

The second workshop in Hamburg was developed on the basis of delivery experience of the first workshop, reflections and feedbacks from participants. Although the framework and the



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concept of the second workshop in Hamburg were kept the same, some changes in preparation of the workshop and organisation were made.

Table 8 Changes made for the second workshop in Hamburg

<p>Design of tandem teams</p>	<ul style="list-style-type: none"> - Tandem partners were selected based on their complementary skills and backgrounds, not on earlier assumption industry-academia tandem used for the first workshop. - Interviews were conducted with each individual registered to the workshop in order to collect more information about the business idea, interests, backgrounds and competencies
<p>Workshop organisation</p>	<ul style="list-style-type: none"> - Timing of the workshop sessions has been coordinated with speakers and maintained by one of the workshop organisers - To make more use of group discussions and extend networking possibilities, each tandem team was matched with another to share one table. Therefore each table had 2 tandem teams (4 people in total) to work together on specific exercises. The “table” matching has been made based on participants’ skills and complementary backgrounds.
<p>Learning material</p>	<ul style="list-style-type: none"> - The content of the Stakeholder Management Case Study and structure of the session have been further improved based on feedbacks and reflections from the first workshop.
<p>Workshop Agenda</p>	<ul style="list-style-type: none"> - The first day of the workshop in addition to earlier welcoming and getting to know each other rounds comprised an “ice-breaking” element introducing a small exercise for tandem partners and idea pitching. - Extending session “Ideas Development” and integrating mini-exercises - Introduction of the session “Assumptions and Validation”, where tandem partners worked on developing the ideas given guidelines to follow.
<p>Training facilitation</p>	<ul style="list-style-type: none"> - The tandem work session “Assumptions and Validation” as well as table discussions “Speed Ideas Sharing” were facilitated by the Startup Dock Consultants and HEKATE leading partners (teaching staff from the TUHH and UNIMAN). Each facilitator was given a specific tandem team matching the tandem idea and area of their expertise.

The changes implemented in the second workshop in Hamburg, though seen rather incremental, enhanced overall performance of the workshop and learning experience of participants.



3.4 Follow-up and Evolution of the Workshop Concepts and Delivery

All four workshops were fully subscribed and the participants were fully engaged in the activities during the workshops. The participants responded very positively to the outcomes of the workshops. Based on the feedback of participants and direct observations at the first two workshops and peer assessment by the HEKATE team members, the programmes of the workshops were further refined after the first two workshops. The experience of delivering the first set of workshops as well as cross-learning experiences between the HEKATE teams across the two HEIs built the basis for further improvement and incremental changes for the second set of workshops.

Across the two sets of workshops, what worked particularly well were identified as follows:

- **A panel session** on “Enterprising scientists” at UNIMAN first session worked extremely well with a mixture of speakers (technology entrepreneur, academics and industry managers). This was repeated in the second workshop.
- **Use of the video clips** presenting entrepreneurs were considered to be a powerful method of engaging the participants. The use of video was facilitated by a very experienced venture capitalist/entrepreneur. This could be a potential for repeating similar workshops for the future although the presence of the actual venture capitalist/entrepreneur was the key for the success of this media.
- **Pitch coaching and communication skills** were given the highest score based on participants’ ranking after the workshop. Each participant learnt how to present an idea in a convincing and efficient way within 1 minute and received an individual feedback from a professional pitch coach.
- **Jury panel** for the session “Pitch your idea” has been well assembled, comprising three experts from the fields related to most ideas of participants. Jury members challenged participants with questions, shared their expertise and provided useful contacts.

Improvements made based on the earlier workshops and worked better in the later workshops were as follows:

- **Stakeholder management session** with a case study – after the first Manchester workshop, a new case study idea developed, which was implemented in Hamburg’s first workshop. At the first Hamburg and second Manchester workshops, the case study session was co-delivered by Natalia Tomiyama (TUHH) and Nick Clifford



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(UNIMAN) as a joint effort. Some amendments made after the Hamburg session, and the subsequent session at the Manchester workshop was very successfully delivered and rated the highest score amongst the participants. In the second Hamburg workshop, the case study was delivered again with a group of industry and university participants. See the Workshop evaluation section for more details.

- **Tandem formation strategies at Hamburg workshops** - Two workshops in Hamburg tested the concept of entrepreneurship training in tandem by having participants from both university and industry working in pair (idea holder - non idea holder). For the first workshop in Hamburg, tandem-teams were formed of industry professionals and academic researchers paired together. This was one of the main criteria for matching partners. One of tandem partners held an idea and second partner would be matched based on the information provided in registration form. Additionally, when the information in forms was not sufficient, phone interviews were conducted.

Tandem formation process for the second workshop in Hamburg was different. The main criteria for matching were complementary skills, area of expertise and industry segment. A concept of pairing together industry professionals with academic researchers was not fully left but given a secondary role. Furthermore, phone interviews have been conducted with every candidate registered for the workshop, which increased a chance of better matching and based on feedbacks of participants, improved learning experiences of participants.

It is important to note that effectiveness of tandem matching mainly depends on scope of participants applied for the workshop, for instance: field of work or study, idea development stage, application field of business ideas, motivation etc. The more homogeneous the group of applicants is, the easier the selection process is and the higher the chance of successful collaboration of tandem partners is.

- **Individual coaching of tandem teams** - Although coaching of tandem teams during “Assumptions and Validation” exercise has been already implemented in the first workshop, this teaching approach was further refined in the second workshop. In particular, each tandem team was assigned to a specific coach with expertise in field related to tandem’s idea. Therefore, the ideas have been developed in a timely and more structured way.



4. Evaluation of the Workshops

4.1. Highlights from the participants' evaluation

In order to assess the effectiveness of the workshops, much emphasis was placed on receiving the feedback of the participants. A standardised form of questionnaire was used (see Annex). Different cohorts of participants attended the four workshops. The target groups for the workshops held by UNIMAN and TUHH were also different, so the aim here is not to compare the results across the two HEIs but to contrast the lessons learnt. The Manchester analysis shows changes in the attitudes of the participants and the perceived impacts from each of the workshops, indicating similar outcomes from the two workshops. The Hamburg analysis investigates the differences between the two workshops hosted at Hamburg, and examines the factors that influenced the results of the participants' evaluation.

Manchester

One of the key objectives of the HEKATE workshops was to influence attitudes and intentions of the participants towards entrepreneurship in a broad sense including their commercial opportunities and career development. It is important to consider how the workshop programmes might have brought about changes in levels of individual's awareness and entrepreneurial behaviour.

A descriptive analysis of the questionnaire results from the two Manchester workshops demonstrate similar perceptions of each cohort of the participants about the "impact" from the workshop they attended respectively in October 2014 and March 2015. The average score of these listed impacts are presented in Figure 3 (5 being "very strong" and 1 being "none"). In both cases, the participants responded they would take more training courses in the future as an impact from the HEKATE workshop.

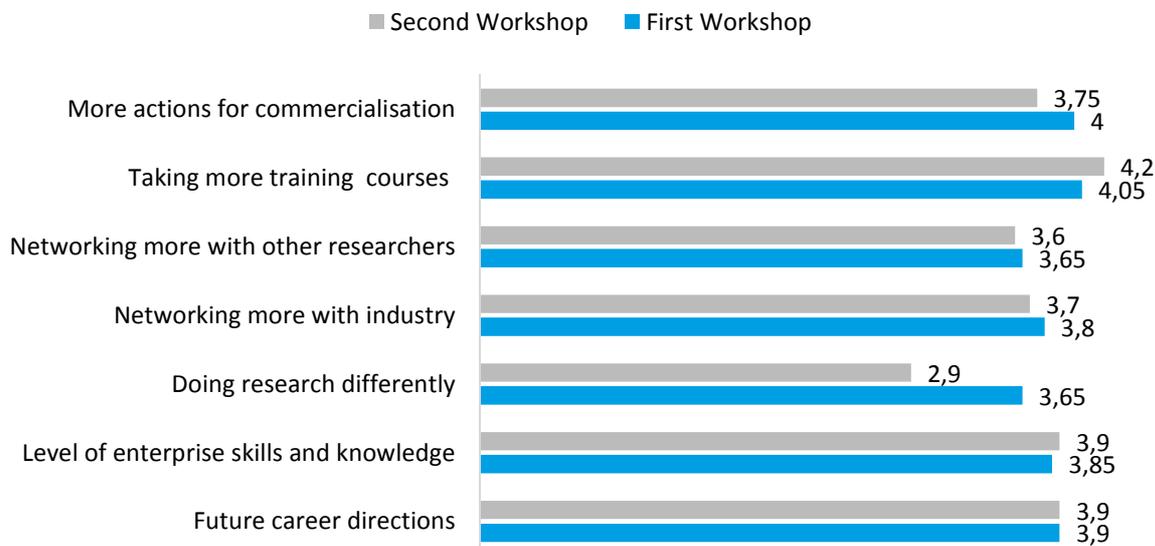


Figure 3 Perceived impacts from the two Manchester Workshops (5- very strong; 4- strong; 3- neutral; 2-weak; 1- none)

The Manchester workshop participants provided the following comments at the end of each of the workshops-

In terms of the learning points, participants in both workshops mentioned the importance of customers and the market:

“One of the strongest points conveyed was the importance of the customer and generating awareness in the customer of your technology’s value – focus on the end point (i.e. sales) from the start! I will be implementing this strategy as I enter my (hopeful) future role in business development” (UNIMAN, first workshop)

“now I know the importance of knowing my customers, the importance of my managing my stakeholders, and the importance of planning ahead” (UNIMAN, second workshop)

As a result of the workshop, the differences will be made in –

“the way I see my research project – not only to focus on the technical details but to think of the impact on customers” (UNIMAN, second workshop)



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Many of the participants commented that the workshops opened wider career opportunities and potential pathways:

“I am more inclined towards starting a start-up company” (UNIMAN, first workshop)

“it was a kick start for my thoughts about enterprise” (UNIMAN, first workshop)

“not everybody can make it to an academic position, Most researchers have the mind of entrepreneur but need to be aware of their potential” (UNIMAN, first workshop)

“I am less threatened about my career pathways after the workshop. I realised that there are a lot of opportunities and one needs to take chances and to be more enthusiastic” (Overseas, second workshop)

These comments highlight not only the changes in awareness and ways of thinking but also, possibly, changes in their future behaviour.

“I liked this course as it was more on how to do it rather than the specifics of IP etc. Foster this “you can do it/get up and go” attitude rather than add the technical theory stuff” (UNIMAN, first workshop)

The “role models” seem to be important, for example one of the participants appreciated the workshop because:

“Provided in depth and reliable explanations of experiences of real-life entrepreneurs (i.e. coming from academic background) and inspiration for pursuing our own enterprising ventures” (UNIMAN, first workshop)

Several participants mentioned the needs for engineer researchers to have training in business and enterprise areas. For example, one of the participants pointed out:

“As an engineer, we never see or study these kind of topic, that will definitely affect you in the future” (UNIMAN, second workshop)

Hamburg

The evaluation of the two workshops in Hamburg indicates an improvement in the delivery of the second workshop compared to the first one. At least partly, such improvement is based on the learning and experiences of the first workshop, which was reflected in the design and



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implementation of the second workshop. Overall, the second workshop in Hamburg received better feedbacks from participants in terms of organisation, impact of the workshop (entrepreneurship skills and tools learnt) and overall performance of the workshop (see Appendix for the specific outcomes and comparison of the evaluation).

It is important to highlight that elements like “Format of the workshop” and “Choice of topics” have been ranked similarly by participants of the first and second workshop, while “Experience of working in tandem” and “Networking opportunities” show significant difference in ranking. This could suggest that changes made in the second workshop have positive influence on performance of the workshop. Figure 4 below shows that an average rank for the second workshop is between “excellent” and “good”, whereas first workshop has been ranked between “good” and “average”.

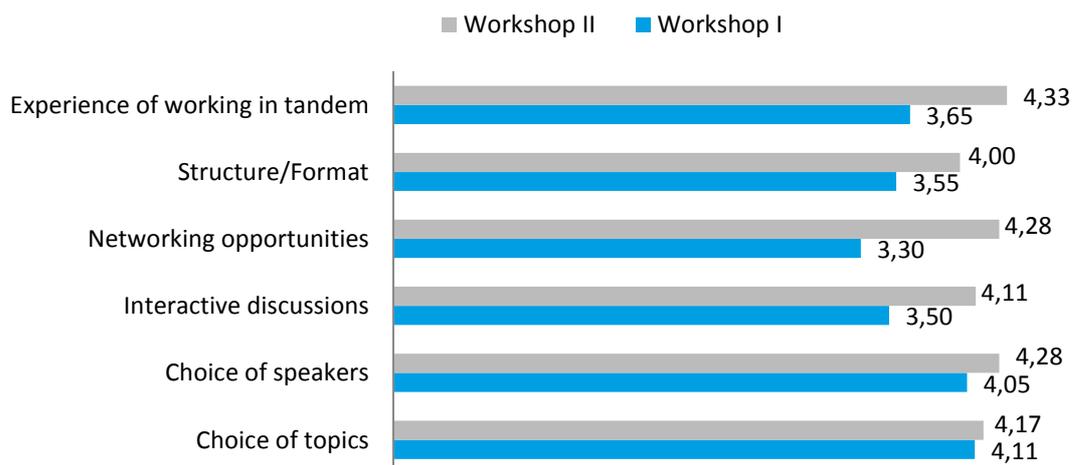


Figure 4 Hamburg workshops ranking based on average value (5 - excellent, 4 - good, 3 - average, 2 - fair, 1 - poor)

Furthermore, evaluation of both workshops reveals differences in impacts of the “entrepreneurship skills and tools” learnt among those participants who had ideas for business development prior to the workshop and those without. Figure 5 shows significant improvement in ranking of participants “without ideas” from the first and second workshops. This also means that although working on ideas of someone else, non-idea holders of the second workshop were influenced by “Entrepreneurship skills and tools” stronger than their tandem partners with ideas.



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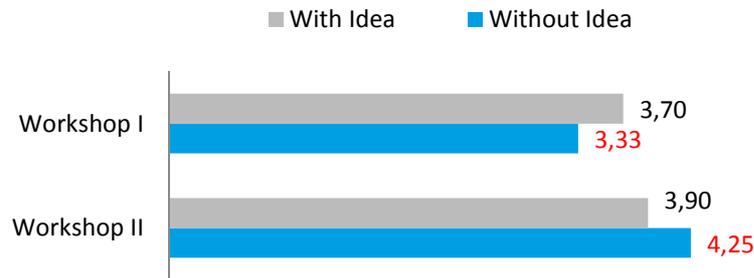


Figure 5 Impacts of entrepreneurship skills and tools learnt based on average value (5- very strong; 4- strong; 3- neutral; 2-weak; 1- none)

Differences in ranking of the workshop impact among industry and academic participants of both workshops are not consistent and could be due to individual perceptions.

In general, a concept of entrepreneurship training in tandem has received positive responses from attendees of the Hamburg workshops. Changes made in setting tandem partners for the second workshop might play a crucial role in higher ranking of the latter. It is difficult to argue though, whether entrepreneurship training in “tandem” has better impact on participants than more traditional training models in the long run. However, what was found is that there is a direct correlation between individual experiences of working in tandem, perception of the workshop performance and entrepreneurship skills learnt.

Further comments signify that the HEKATE workshops in Hamburg have been successfully delivered and positively received among participants from both industry and academia.

“Very good workshop, I learnt a lot and I am surprised how brilliant all the ideas are!”
(Packaging Manager from Beiersdorf)

“Great motivation to pursue your own business idea”
(PhD Student from Max-Planck Institute)

“Thank you very much to all organizers. It was a great experience, good matching for partners, well organized and structured workshop.”
(PhD Student from KIT)

“Really great to combine research and industry participants. Great speakers!”
(Engineer from Airbus)



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Despite these recognised differences, all workshops were evaluated positively. One of the most innovative trials of all the workshops – the formation of the “tandem” was tested in the first Hamburg workshop and the delivery was improved in the second. The improvements of the tandem formation strategies for the second workshop in Hamburg did make a strong effect on entrepreneurial intentions of some participants. In particular, two participants of the last workshop in Hamburg joined forces to pursue development of a new technology idea. Thus, the workshop can be seen not only as a nurturing environment for already existing ideas but also as a catalyst for ideas creation and new teams formation.

4.2. Workshops’ benefits to the partners and beyond

The immediate beneficiaries of the HEKATE workshops were the targeted participants to the workshops – early career researchers, namely, doctoral researchers and postdoctoral researchers in STEM areas, and early career industry managers in the case of Hamburg workshops. However, these also served to show industrialists how to engage with this topic.

Industry contributors

Individuals from industry partners and contributors - both EIRMA member companies and local start-ups, who contributed to the workshops, provided positive feedback on their interactive experiences with early career researchers and sharing their experiences.

“I very much enjoyed the workshop and hope that my contribution helped. I was impressed with the engagement and enthusiasm of the participants. They seemed to be really listening to the presentations and engaged in the discussions. This is not a surprise given the quality of the inputs I listened to on the second day! I thought that the opportunity for the participants to hear from and engage with a variety of different people from outside the UoM was very positive”.

[Industry contributor; UNIMAN workshops]

“The workshop is a much needed energy boost for budding entrepreneurs, so well done. I am a believer in ‘seeing is believing’ and to immerse oneself in environments where innovation happens”.

[Industry contributor/local entrepreneur; UNIMAN workshops]

One of the industry contributors with EIRMA committee responsibility commented on the working relationship with the young “Millennials” as an area of concern but he mentioned his positive observation from the HEKATE workshops.



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“It was nice to be able to represent EIRMA, and I hope that connection to MBS can continue. Both in Manchester and Hamburg it was great to see a group of young researchers who want to learn and develop their skills; one of our agenda items at EIRMA’s programme committee on Monday was a topic on how to interact with Millennials with their new approaches to work. The groups I saw at the two events show that there is a wealth of talent out there that we should be helping to develop in exactly the way HEKATE is doing. It was an inspirational visit for me; thank you for inviting me to be part of the workshop”.

[Industry contributor; UNIMAN and TUHH workshops]

The contribution of a local tech-entrepreneur as a role model was acknowledged by another industry contributor, along with the structure of the workshop:

“...the structure of the first day seemed to be very good - mixing theory/practical working sessions and illustrative case studies worked well. It’s obviously great that you can call on a local success story like Farid to inspire attendees; I’m sure that was a big plus.”

[Industry contributor; UNIMAN and TUHH workshops]

Partner HEIs

The host HEIs – UNIMAN and TUHH – have gained experiences in building relationships with industry partners and developing training programmes jointly with both EIRMA member companies and local start-up communities. HEKATE values were also found in collaborating with the HEI in other countries, with different institutional environments. There are a number of lessons learnt in terms of delivering entrepreneurial training (see 5.1).

European learning experiences

The HEKATE team (Fumi Kitagawa from UNIMAN and Michel Judkiewicz from EIRMA) participated in the Thematic Cluster meeting on Knowledge Alliances organised by the European Commission in November 2014, where we presented the outcomes from the first two workshops. There were good interactions with other Knowledge Alliances and sharing of experiences. Kitagawa was then invited by one of the Knowledge Alliances IDEATE’s residential weekly programme held in Manchester in February 2015, and acted as a panellist for the students’ entrepreneurial idea competition. It was a precious opportunity for the two Knowledge Alliances projects to share the project ideas, compare objectives, challenges and international learning experiences.



5. Lessons Learnt from the Workshops

5.1 Design, Contents and Delivery

Our aim in designing the HEKATE workshop concept and the structure was to create a space where early career research students, post-doctoral researchers, and also, early career managers in industry from engineering and technology fields could interact through the entrepreneurial training programme. It was specifically designed for the target groups of participants; to develop soft skills and to give the opportunity for professional networking. For this reason the number of participants was limited to 25 delegates each time, with a strong element of action learning and participation by the delegates.

The Manchester workshops targeted participants from Academe including doctoral researchers and post-doctoral researchers, especially as the provisions for the latter group are less developed. The workshop contributors included local technology entrepreneurs, university scientists working at start-up companies, an early-mid career industry manager, as well as senior managers from EIRMA companies (currently and previously). The Manchester “tandem” was facilitated by the design of the workshops where participants worked in groups and interacted with the industry contributors, who facilitated the entrepreneurial processes and idea development.

The Hamburg workshops took the “tandem” concept further. The workshops targeted mixed groups of participants including academic doctoral researchers and early career industry managers (about half each), and the workshops enabled them to work together in “tandem”. This “tandem” approach proved to be successful – the workshops observed the development of ideas in tandem and groups of tandems. In creating such learning environments, taking into consideration of the complementary skills, the industry experience of the participants is deemed to be critical.

The four workshops had different levels of heterogeneity – in terms of the mixture of participants’ background (academic/industry experiences); academic disciplines; nationalities/ethnic background and gender, and motivation and career aspirations. For example, some participants wanted to learn more focused skills and technique for start-up companies, whilst others had an interest in a broader commercialisation of research for industry needs. Adjusting the contents and delivery methods in light of the characteristics



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and needs of the specific targeted participants will help improve the effectiveness and give bigger impact for the workshops.

5.2 Pedagogical Lessons Learnt

In designing workshop programmes it is important to make sure appropriate content is included within the curriculum, combined with the right pedagogic techniques to deliver these contents. Our experiences and learning from the workshops highlight the following lessons. These resonate well with the existing entrepreneurship education literature⁸ as well as the earlier findings and trends identified in the industry consultations conducted as part of the HEKATE review on existing entrepreneurship training (see Section 3):

- **Case studies and active learning** - participants will take a more active role in learning during case studies which employ written case materials. In the HEKATE workshops, the case studies aided participants to explore the entrepreneurial approach and other aspects of the venture creation process. In short, courses such as this that aim to initiate changes in behaviour of the participants, ‘learning-by-doing’ is an essential methodology

- **Guest entrepreneurs/R&D managers as speakers** enable participants to learn directly from those who have a high credibility as a result of first-hand experience of the innovation and venture creation process. Accessibility to the delegates was key, and **panel sessions** were helpful in this respect.

- **Role models** - Guest speakers have to be credible role models to maximise the likelihood of influencing a participant’s beliefs and attitudes. It may be desirable to introduce role models who are at different stages of their careers, to create a sense of the steps along the pathway to entrepreneurial success. The Speakers provided signposts to the next steps and to other resources and guidance after the workshops, in this way acting like **mentors**.

- **Facilitators** - The skills and roles of the training team including facilitators of interactive sessions, learning coaches, idea development mentors and panel of juries

⁸ Krebner, C. (2001). Learning experientially through case studies? A conceptual analysis. *Teaching in Higher Education*, 6(2), 217–228. Cooper, S. Y. and Lucas, W. A. (2006). Developing self-efficacy for innovation and entrepreneurship: an educational approach. *International Journal of Entrepreneurship Education* 4. 141-162.



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during the workshops are very important. These facilitators and trainers need to have experience of handling group work, with relevant expertise in identifying and developing technology and business opportunities.

5.3 Wider Resource Implications

The HEKATE workshops highlight a number of key lessons and challenges. HEIs interested in developing similar Knowledge Alliances, or entrepreneurial training “in tandem” with industry may find some of these useful:

Relationship building between HEI and industry

- Preparation of a workshop takes a long time. Recruitment of industry contributors and content co-development needs at least a 3 month lead time from setting the workshop date,
- R&D managers and entrepreneurs have a tight schedule and their involvement in HEIs needs to be backed by their companies.
- Industry contributors all appreciated the opportunity to engage with early career researchers and early researchers/managers. However, they may not appreciate continuing taking on the same role again due to job time constraints.
- If their time is covered by their employer, individuals need to persuade their management to make them available. in the case of self-employment they have to give up their own time. In either case paying for their time on a commercial base is a sensitive issue, and may be a problem for European funding regulation as well as policy in the academic institution.
- In order to reduce costs (e.g. travel) and make the relationships sustainable, it is preferable to try and use speakers from local companies that are members of EIRMA.

Designing and delivering the workshop

- Finding inspirational speakers with whom the audience would have a strong and credible identification is key.
- To make the workshop as ‘portable’ as possible, the design of the workshop should not be too dependent on unique contribution from specific individuals.
- The training team has to identify participants’ needs and specific interests prior to the workshop by personal contact, and this can be time-consuming. In the case of Hamburg workshop, the “tandem” pair formation process took more than 2 weeks including interviews of the potential participants and identifying the match of the pair.



HEKATE

- Developing new teaching materials added value to the workshops. Also we reduced design costs by using existing materials and incorporating experienced colleagues in the delivery of the workshops.
- Networking during the workshop needs designated time and space, it does not happen automatically. During the workshop, a mixture of structured interactions and free interactions is key.
- Online technology can be a useful way to support entrepreneurial training. However, when face-to-face interactions are available, participants would prefer to have a physical workshop instead of purely online communication.

Institutional contexts and capacity building

- New publicly funded projects need to be carefully aligned to existing training programmes/activities and conceived as “value adding” at the home institution. Careful communication and design are needed so that they are not perceived as “re-inventing the wheel” or even “competing” with existing training programmes/activities.
- Capacity development of the workshop organisers is important. In delivering the HEKATE workshops, the HEKATE team members at the two HEIs have accumulated contacts with industry, participants and various internal collaborators within their universities. Running the workshop second time was definitely easier than the first time.
- Engaging with a wider community of academic staff in design and delivery of the workshops at the host university is important so the learning from the HEKATE project can be spread out.

In summary, the HEKATE workshop approach serves as one model for Knowledge Partnerships. It shows the value of direct personal contact between experienced practitioners and students/early career managers which cannot be replaced by other means. The workshops when advertised received a very high level of interest. However, setting up such forms of interaction is resource intensive and time consuming. Duplication of the workshops with the level of trainer participation without funding is an issue, but clearly the demand is high. Relationship building with industry needs to be started well in advance and maintained continuously. Recruitment of experienced practitioners needs to be an on-going process. The platform built up by EIRMA during the project could facilitate this process in the future.



HEKATE

5.4 Towards the Sustainability of the HEKATE Workshops

One pertinent issue in delivering this kind of training will remain the fluctuation of staff at the HEIs, due to the huge amount of time-limited employment contracts, as well as desired mobility of academic staff, and natural cycles of retirement. This affected the HEKATE team. However, in order to perpetuate the impacts and benefits from the workshop development experience deliberate efforts were made to integrate the project outcomes into the existing institutional structure of the two HEIs.

At Manchester, one of the HEKATE team members (Gamlen), who has a number of industry experiences and contacts from 30 years in Industry, retired the end of August 2014. Given the period of joint delivery and learning, the rest of the UNIMAN team managed to build on the networks and experiences on the first workshop and delivered the second workshop with some further contribution from Gamlen. Right after the second workshop, another team member (Kitagawa) who had been project managing the delivery of the first and second workshops left UNIMAN to move to another UK university. The UNIMAN team had developed close relationships with a broader community of University of Manchester enterprise teaching staff, which helped to sustain the outcomes and lessons from the HEKATE workshops. In particular to ensure the sustainability of the project and in order to embed the HEKATE networks and contacts the joint delivery between the MEC and HEKATE project was strengthened for the second workshop.

One of the impacts of the HEKATE workshops was the networks and relationships created between the workshop participants and a local scientific entrepreneur who came to talk at the workshops. The entrepreneur invited the participants to his start-up company at Manchester Science Park, and introduced the participants to the local entrepreneurial community.

At TUHH, there was also a move of HEKATE team member (Tomiya) after the delivery of the second workshop. At TUHH sustainability of the learnings is ensured by the involvement of the Startup Dock as well as close collaboration between TuTech and TUHH in entrepreneurship education. Specifically, Startup Dock is planning on implementing an online platform, which would facilitate team formation and networking among those interested in entrepreneurship and registered in the platform.



6. Conclusions

6.1. Impact

Our success metric for these ‘inspirational’ workshops was the degree to which delegates were motivated to seek further information and experience of entrepreneurship.

- Participants responded very positively to the workshops.
- At both UNIMAN workshops participants actively sought to visit the laboratories of an local entrepreneur (F Khan). Laying the seeds of networks among the participants and local entrepreneurs happened after the workshops, both in Manchester and Hamburg.
- New Case Studies were developed and improved for the workshops
- Collaborations were built during and after the workshops
 - Between Companies and HEIs
 - Between HEIs
 - Within HEIs
 - Between individuals including university researchers and entrepreneurs, and industry participants

6.2. Challenges

Some of the challenges we encountered in designing, developing and delivering the entrepreneurship training workshops, and the ways in which we tried to overcome these are identified below.

Identifying industry collaborators

- Even though the HEKATE project could build on the access to the EIRMA member companies, recruitment of industrial speakers still took a long time. EIRMA member companies showed an interest in the project, but identifying the right individuals who could commit time to engage in the workshop was not so straightforward because many of these are large organisations.
- There needs to be a balance between organisations that show an interest and support engaging with an HE workshop, and particular individuals who have skills and passion in doing such activities. The challenge arises when a company is supportive but does not have an appropriate speaker, or occasionally when an individual is keen to contribute but his employer is not supportive.
- In addition to EIRMA member companies, the HEKATE teams identified a number of new collaborators in the local environments, including local entrepreneurs, who



HEKATE

were keen to contribute to the workshops. The challenge is ensuring that the enthusiastic participants have the appropriate presentational skills and are credible with the audience.

Creating and sustaining the relationship with industry

- There is a need to have mixed portfolio of industry contributors including local start-ups, industry collaborators nationally and at the European level e.g. EIRMA. This takes time and effort to build.
- Sustaining the relationship with industry contributors after the workshop requires sustained efforts to be made by both HEIs and the industrial partners.

Developing case studies

- Developing learning materials with industry contributors requires knowledge, skills and experiences of business practices and organisational complexities.
- Due to a lack of available materials the HEKATE team developed original case studies, one originating from close collaboration with an EIRMA member company, and another developed for a stakeholder management session. These are tangible outcomes of the Manchester-Hamburg collaboration and the session jointly delivered by TUHH and UNIMAN had a very positive evaluation from the participants.

Recruitment of participants

- The success of the workshop is dependent on active and enthusiastic engagement by the participants. Recruiting such participants who are interested and also enthusiastic about turning ideas into business/enterprising science is imperative. Personalised communication prior to the workshop seems to work well, but again is a high demand on resources.
- Mixing industry and academic early career professionals as participants was a new challenge the HEKATE team tackled and while it turned out to be a success; it required very labour intensive preparation and matching processes.

Delivering methods

- Use of online platforms and social media could provide a supporting instrument but needs to be thoroughly integrated with the design and delivery of the workshop.

Monitoring impacts and follow up

- We have identified positive impacts from our workshops evaluation, but due to limited project duration we are not able to identify the long-term effects of the workshops.
- We need to have mechanisms to keep communication with the participants. Forms of online platforms may work for this purpose e.g. an Alumni portal.



6.3. Lessons for the Future

From running the four workshops, we conclude the following.

As a Knowledge Partnership model – the HEKATE workshops demonstrated the additional value of industry engagement, in particular by bringing in EIRMA member companies, complemented by local contacts and co-developed learning resources. The workshop adopted an ‘Action Learning’ approach, including case studies, role plays, idea pitches and panel discussions.

We have identified the following key lessons from our workshop delivery experiences:

- The entrepreneurship training should facilitate an open and interactive environment, where participants meet role models and guest speakers with experience relevant for their career choices; exchange their experiences, and build a sustainable peer network.
- Entrepreneurship training need to be adjusted and tailored to the specific needs of the participants, which helps provide better opportunities for participants to develop their entrepreneurial ideas and skills, motivate them to think and behave entrepreneurially, and increase effectiveness of applied learning and networking.
- The entrepreneurship training workshop should provide an opportunity to develop and practise key ‘soft’ (personal) skills e.g. communication, influencing, team working. These are valued by employers as well as young professionals and researchers with technical backgrounds.

We have built relationships both internally and externally. Working between industry and academia to develop training programmes requires negotiation and communication on the contents and delivery methods as well as identifying and negotiating with the contributors.

If carefully matched according to their experiences and areas of expertise, industry-science tandem models developed through the workshops would have a high likelihood to continue cooperation after the workshop.

There is no “one size fit all” model for entrepreneurship training programmes or knowledge partnerships. Any training concepts, design and delivery approaches need to be tailored to the overall purpose of specific programmes and the skills and expertise of the workshop collaborators (i.e. the *supply* side) as well as the needs of specific organisations and the participants (i.e. the *demand* side). The interactions through the HEKATE workshops led to new collaborations, networks and changes in individual attitudes and behaviours. Whether or not these experiences and lessons through the HEKATE workshop can be applied elsewhere and/or modified with different forms will prove the future.

ANNEX

Manchester Workshops

- Programme of the first workshop
- Evaluation form of the workshop
- Evaluation of the first workshop
- Programme of the second workshop
- Evaluation of the second workshop



Enterprising Scientists: Generating Value and Opportunities

DAY ONE TUE 28 OCT; HH 10.04/05			
8.30- 9 am	Registration and coffee		
9.00-9.15	Welcome Session Overview of the two days	Jakob Edler/MIoIR; HEKATE Lynn Sheppard/MEC Fumi Kitagawa/MBS	
9.15-10.00	Making Money from Ideas	Case study/Role play Protecting your 'Aha !' moment	Phil Gamlen/MBS
10.00-11.00	View from a Practitioner- Growing Businesses	'Selling Ice to Eskimos'	Paul Strzelecki/ Nuclear Capital Partners
Coffee break			
11.15-12.15	View from Academia – The Enterprising Scientist	'Where's my clone, dude?'	Paul Townsend/MHS
12.15-13.15	Lunch		
13.15-14.30	The Entrepreneurial Commercialisation of Knowledge	The Journey; The Resources; The Markets The Barriers; The Joy	Martin Henery/MEC
Coffee break			
15.00-16.00	View from a Practitioner- From Science to Business	'Bicarb to BioTech'	John Nicholson/ Gentronix
16.00-16.05	Housekeeping and end of the first day		
DAY TWO WED 29 OCT; HH 10.04/05			
8.30- 9 am	Coffee		
9.00-9.15	Overview of the first day and introduction to the second day		Fumi Kitagawa/MBS
9.15-10.30	Special Panel Session – The Enterprising Scientist: Making Career with Enterprise	<i>The career and Personal Development opportunities for scientists in academia, large MNE and start-up companies</i>	Panel speakers Curtis Dobson; Farid Khan; Colin Mumme-Young Facilitated by Phil Gamlen
Coffee break			
11.00-12.00	From Idea to Reality (1)	Innovation inside a large company; intrapreneurs/ entrepreneurs	Thierry Piret/ Solvay Ventures
12.00-13.00	Lunch		
13.00-14.15	From Idea to Reality (2)	Case study/Role play of Entrepreneurial Business venture	Facilitated by Thierry Piret/ Solvay Ventures
Coffee break			
14.45-16.00	Stakeholder Management	Case Study/Role Play. Who's with you and who's against you, and what to do about it.	Nick Clifford and Phil Gamlen/ MBS
16.00-16.45	Where Next? Resources and opportunities Feedback from the participants	Where do I go next and who/what can help me?	Lynn Sheppard/MEC Laura Etchells / UMI3 Fumi Kitagawa/MBS and all



HEKATE

***Enterprising Scientists:
Generating Value and Opportunities***
28-29 October 2014
Manchester

Workshop Evaluation Questionnaire

Before leaving, kindly take a few minutes to fill in and return this form to us.

1. How did you hear about the Workshop?

- Through the University/ School/Faculty (e.g. Mailing List, email, intranet)
- Through TuTech
- Through EIRMA
- HEKATE website
- Other

2. What prompted you to join this Workshop? (select at least one)

- Personal / Professional interest
- Networking Opportunities
- Speakers and Contributions
- I was asked to participate / represent my group/ company/.....
- Other.....

3. Are you satisfied with the Workshop organisation?

	Excellent – Good – Average – Poor – Very poor – N/A					
Venue (Accessibility)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Workshop Facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Refreshments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Information prior to the Workshop	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Registration process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Please rate the HEKATE Workshop:

	Excellent – Good – Average – Poor – Very poor – N/A					
Choice of Topics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Choice of Speakers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interactive Discussions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Networking Opportunities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Structure / Format	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Learning Materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. Which sessions or activity met your expectations at best?

	Excellent	Good	Average	Poor	Very poor	N/A
Paul Strzelecki	<input type="checkbox"/>					
Paul Townsend	<input type="checkbox"/>					
Martin Henery	<input type="checkbox"/>					
John Nicholson	<input type="checkbox"/>					
Panel Session	<input type="checkbox"/>					
Thierry Piret	<input type="checkbox"/>					
Nick Clifford and Phil Gamlen						

Comment

.....
.....

6. Please indicate the impact of the HEKATE Workshop for you:

	Very strong	strong	neutral	weak	none	N/A
Your future career directions	<input type="checkbox"/>					
Enterprise skills and knowledge	<input type="checkbox"/>					
Different ways of doing research	<input type="checkbox"/>					
Networking with industry	<input type="checkbox"/>					
Networking with other researchers	<input type="checkbox"/>					
Taking more training courses	<input type="checkbox"/>					
Take actions for commercialisation	<input type="checkbox"/>					

Comment

.....
.....

7. What is the main action point that has resulted for you? What will you be doing differently as a result of attending the Workshop?

Comment

.....
.....

8. What was the best idea that you came across?

Comment

.....
.....

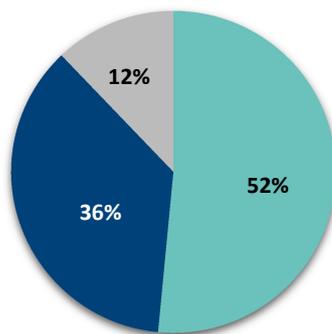
9. What additional content would you have liked this course to cover?

.....
.....



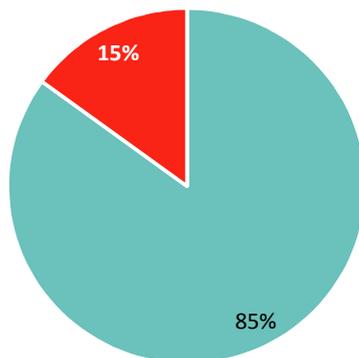
EVALUATION MANCHESTER WORKSHOP I

What promoted you to join the workshop? (multiple answers)



■ Personal /professional interest ■ Networking opportunities ■ Speakers and contributors

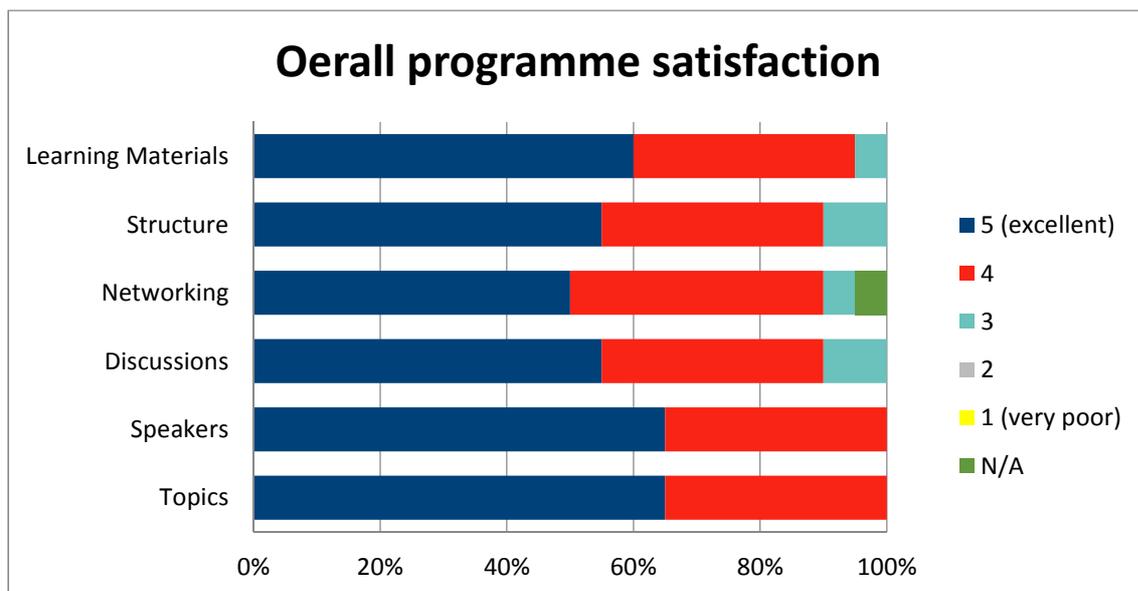
How did you hear about the Workshop?



■ University/School/Faculty ■ TuTech ■ EIRMA ■ HEKATE website ■ Other

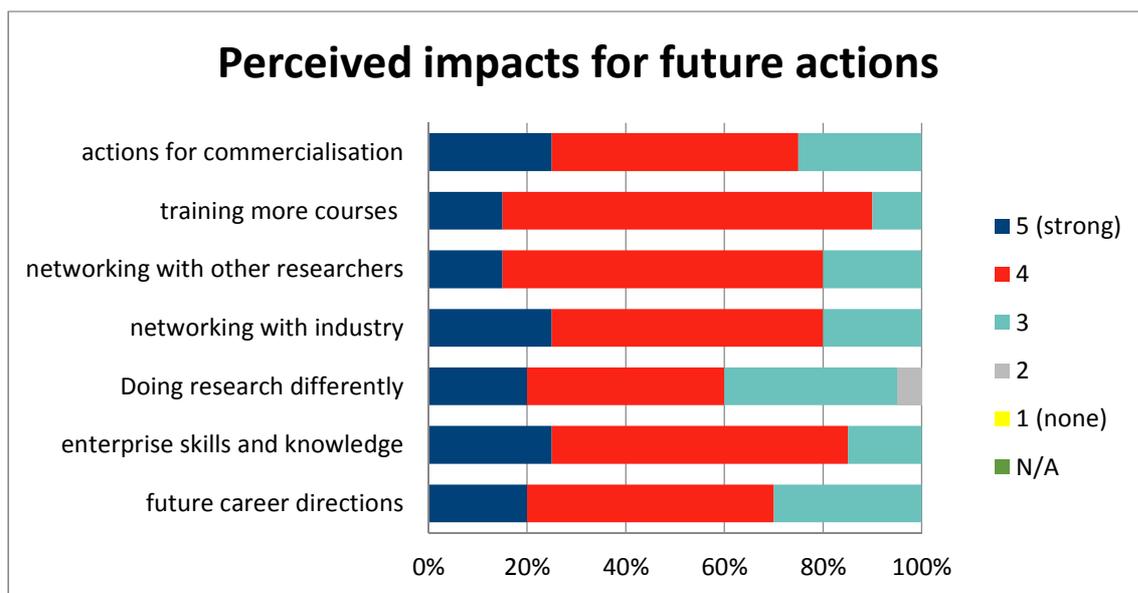
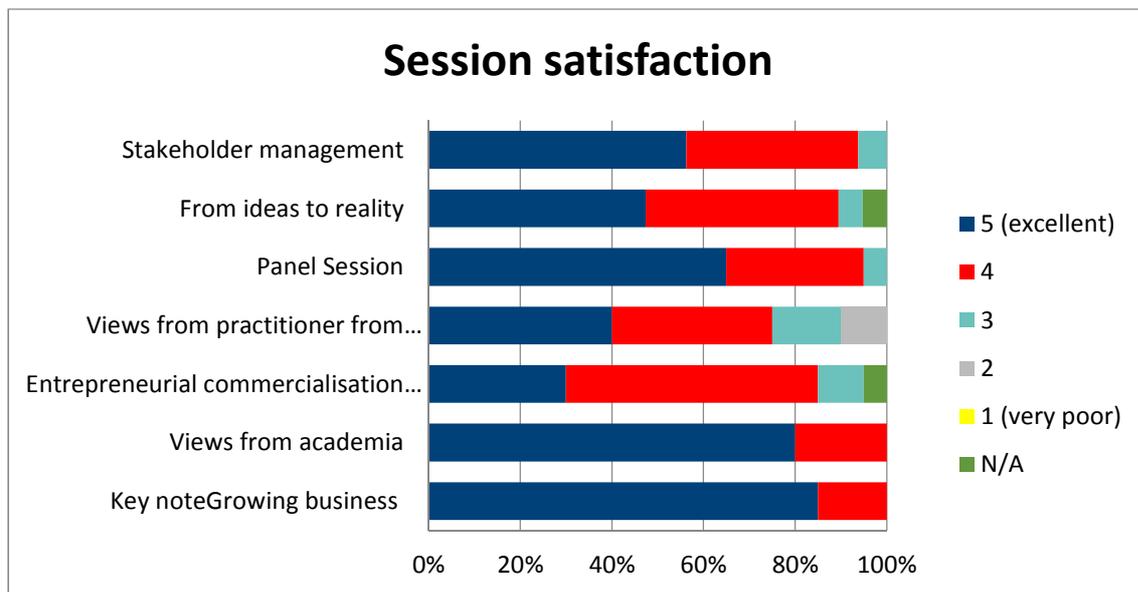


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Enterprising Scientists: Developing Value and Opportunities

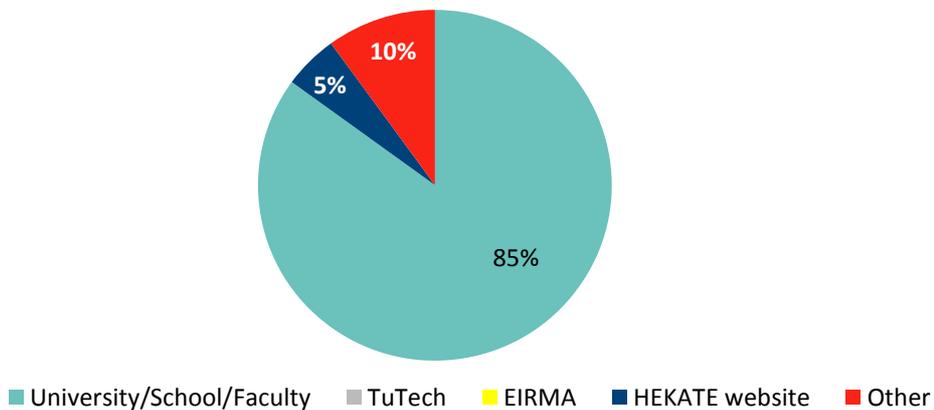
DAY ONE TUE 24 MARCH; HH 10.04/05		
8.30- 9 am	Registration and coffee	
9.00-9.15	Welcome Session Overview of the two days	Philip Shapira/MIoIR; Lynn Sheppard/MEC Fumi Kitagawa/MBS; HEKATE
9.15-10.00	Making Money from Ideas	Case study/Role play Protecting your 'Aha !' moment Phil Gamlen/MBS; HEKATE
10.00-11.15	Entrepreneurial journey	From an academic to an entrepreneur Farid Khan/Protein Technologies
11.15-11.30	Coffee break	
11.30-12.45	The Entrepreneurial Commercialisation of Knowledge	The Journey; The Resources;The Markets; The Barriers; The Joy Martin Henery/MEC
12.45-13.45	Lunch	
13.45-15.00	How to make innovation happen?	Managing Knowledge, R&D, and Innovation Chris Shilling/ Pharma Diagnostics NV
15.00-15.15	Coffee break	
15.15-16.45	Stakeholder Management	Case Study/Role Play. Who's with you and who's against you, and what to do about it. Nick Clifford; Natalia Tomiyama TUHH/MBS joint contribution
House- keeping and Close out the first day		
DAY TWO WED 25 MARCH; HH 10.04/05		
8.30- 9 am	Coffee	
9.00-9.15	Overview of the first day and introduction to the second day	Phil Gamlen; Fumi Kitagawa/MBS
9.15-10.30	Corporate perspective	How do R&D teams deliver to meet the need of the CEO? Colin Mumme-Young/ Formerly Akzo Nobel
Coffee break		
11.00-12.15	From Idea to Reality (1)	Managing innovation portfolio Kevin de Caluwé / Bekaert
12.15-13.00	Lunch	
13.00-14.15	From Idea to Reality (2)	Business idea development With Kevin de Caluwé / Bekaert
Short Coffee break		
14.20-15.50	Academic and Industry perspective; With a mini panel session	Careers and impacts in industry and academia - How do you build a career and research as an engineer/scientist in industry and academia? Stephen Yeates/EPS Veronica Sanchez romaguera, MEC /MBS; Colin Mumme-Young; Kevin de Caluwé; Co-ordinated by Phil Gamlen
15.50-16.40	Where Next? Resources and opportunities Feedback from the participants	Where do I go next and who/what can help me? Lynn Sheppard/MEC; Laura Etchells /UMIP Fumi Kitagawa & Phil Gamlen/MBS; HEKATE and all
End of the workshop		



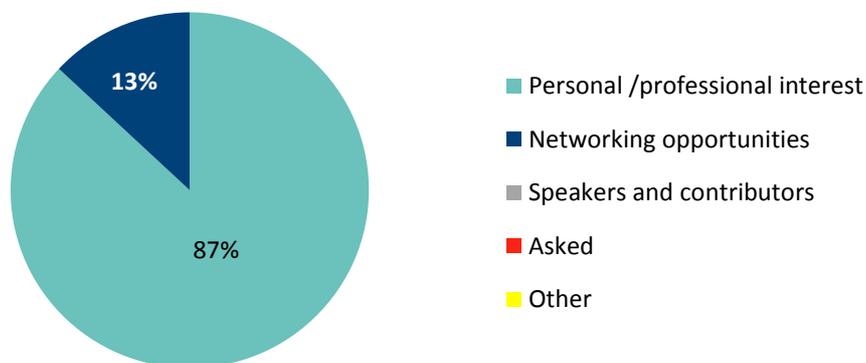
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EVALUATION MANCHESTER WORKSHOP II

How did you hear about the workshop?

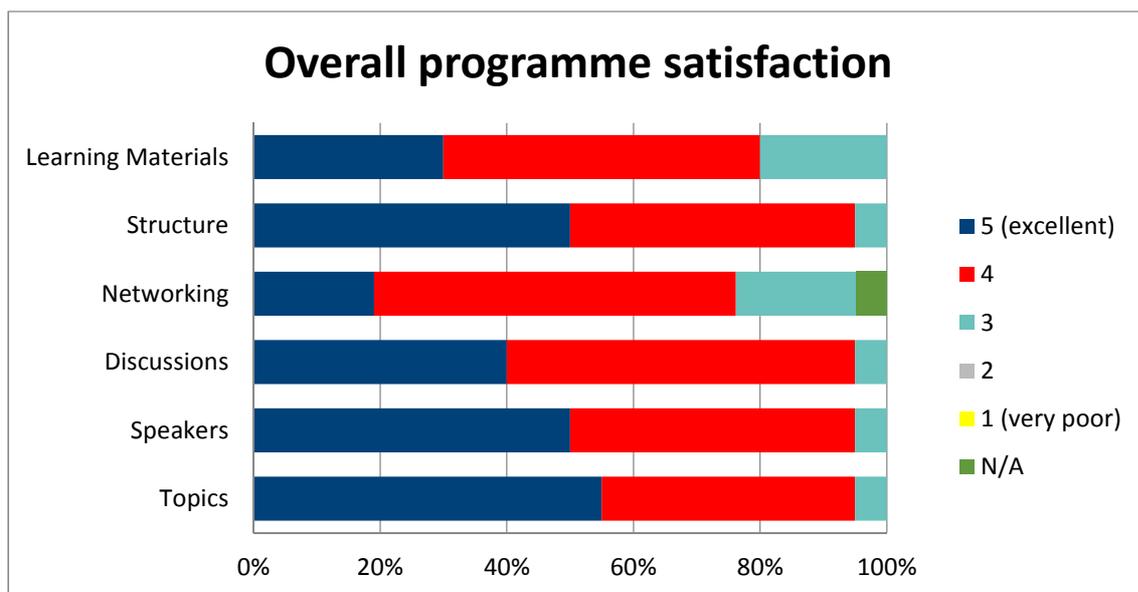
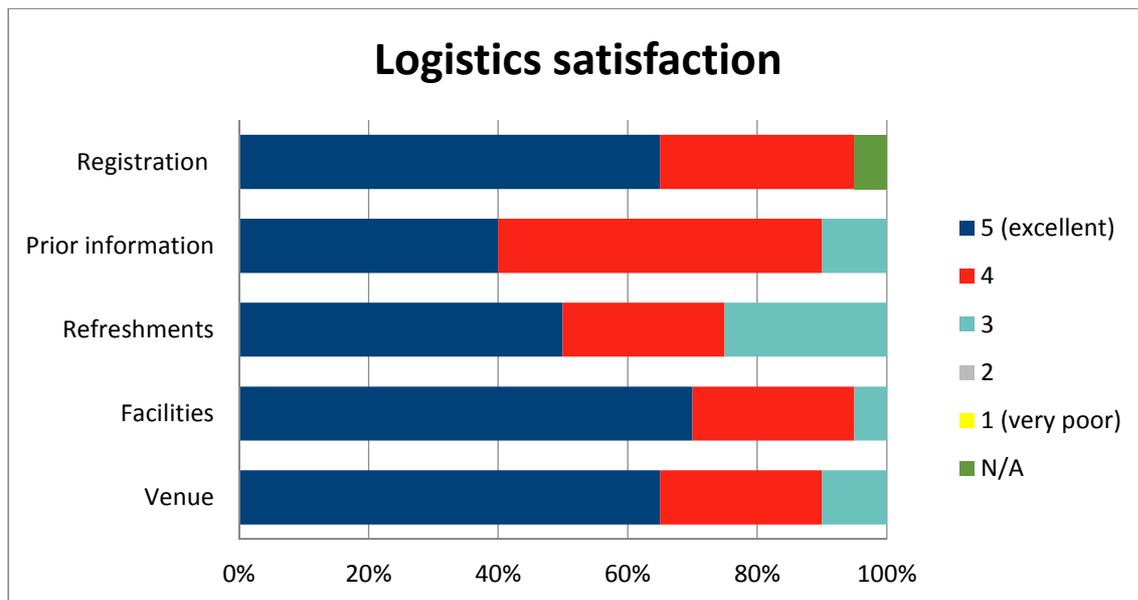


What promoted you to participate? (multiple answer)



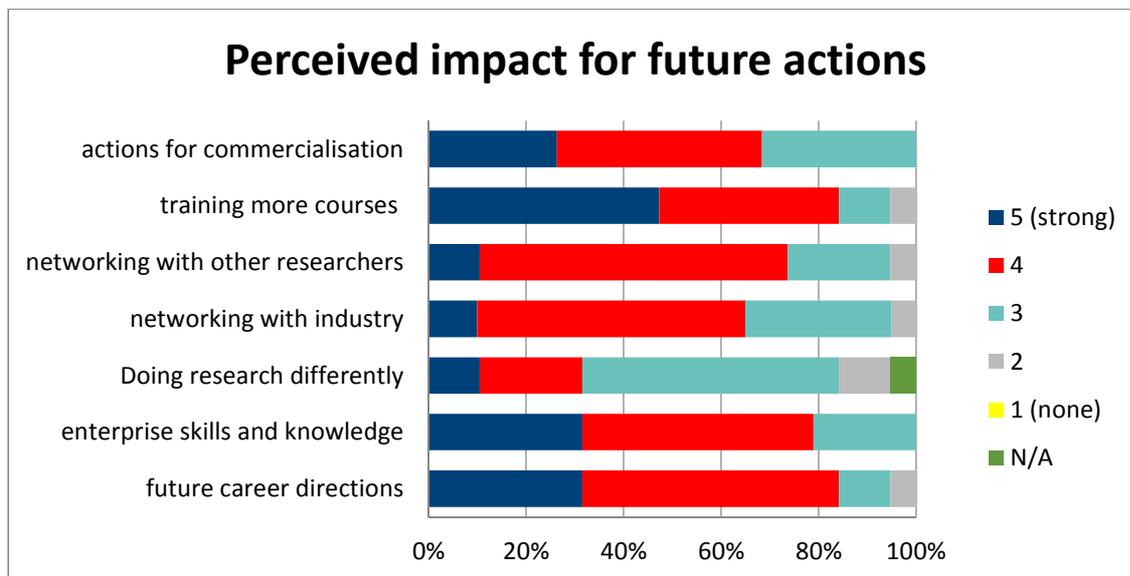
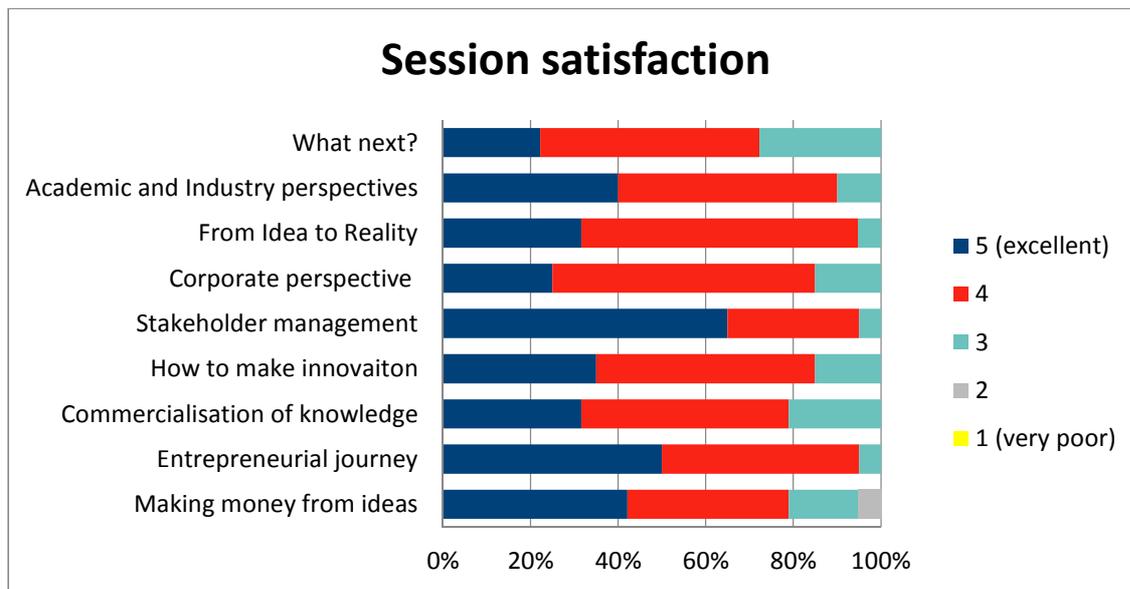


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Hamburg Workshops

- Programme of the first workshop
- Programme of the second workshop
- Evaluation form of the workshop
- Evaluation of the first workshop
- Evaluation of the second workshop



PROGRAMME: HAMBURG HEKATE WORKSHOP I



HEKATE

Entrepreneurship Workshop
“Turning Ideas into Business Opportunities”

26-28 November 2014 in Hamburg

Arrival Day (26 November)

18:00 **Registration**
Welcome and Networking Dinner

1 Day (27 November 2014)

8:30 – 9:00	Introduction	
9:00 – 10:45	Idea Development	Corina Kuiper, Antwerp Management School and Owner of the Effectual Catalyst
	Coffee Break	
11:00 – 12:00	Speed Ideas Sharing	Corina Kuiper
	Lunch	
13:00 - 14:00	From Idea to Project I: industry perspective	Chris Shilling, Pharma Diagnostics NV
14:00 – 15:00	Business Opportunity Evaluation	Prof. Dr. Christian Lüthje, TUHH
	Coffee Break	
15:15 – 16:45	Stakeholder Management Game	Dr. Nick Clifford, Manchester Business School Natalia Tomiyama, TUHH
16:45 - 17:00	Evaluation & Close out	

2 Day (28 November 2014)

8:30 – 9:30	From Idea to Project II: academia perspective	Peter Heydebreck, Inno Group
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HEKATE

Coffee Break

9:45 - 11:00 **Venturing Opportunities & Cases** Thierry Piret, Head of Solvay Ventures

Lunch

11:30 – 14:30 **Pitching & Communication Skills** Beth Susanne, professional pitch coach

Coffee Break

14:45 - 16:15 **Pitch Your Idea** Jury Panel of senior managers and VCs

16:15 – 16:45 **Evaluation & Close out**



This workshop was developed within the EU-funded research project “HEKATE” and supported by the TUHH Startup Dock. Learn more about HEKATE and Startup Dock: hekate-project.eu, startupdock.de



HEKATE

PROGRAMME: HAMBURG HEKATE WORKSHOP II



HEKATE

ENTREPRENEURSHIP WORKSHOP
“TURNING IDEAS INTO BUSINESS OPPORTUNITIES”

8-10 April 2015

Venue: TuTech Innovation GmbH, Harburger Schlosstr. 6-12, 21079 Hamburg

ARRIVAL DAY (WEDNESDAY, 8 APRIL)

18:00	Registration
	Welcome & Idea Introduction
20:00	Networking Dinner

1 DAY (THURSDAY, 9 APRIL)

8:30	Introduction	
9:00 – 10:45	Idea Development	Corina Kuiper, Antwerp Management School and Owner of the Effectual Catalyst
	COFFEE BREAK / NETWORKING	
11:00 – 12:00	Assumptions & Validation	Corina Kuiper
	LUNCH	
13:00 - 14:00	Speed Ideas Sharing	Corina Kuiper
14:00 – 15:00	Business Opportunity Evaluation	Prof. Dr. Christian Lüthje, TUHH
	COFFEE BREAK / NETWORKING	
15:15 – 16:45	Stakeholder Management	Dr. Nick Clifford, Manchester Business School Natalia Tomiyama, TUHH
16:45 - 17:00	Evaluation & Close out	

2 DAY (FRIDAY, 10 APRIL)

8:20	Introduction	
8:30 – 10:00	From Idea to Project: Challenges	Lars Krüger, Senior Innovation Manager at Engage Martin Mahn, Managing Director TuTech Innovation



HEKATE

COFFEE BREAK / NETWORKING

10:15 - 11:00 **Venturing Opportunities & Cases** Dr. Léopold Demiddeler, Founder of TechBridgeOne

LUNCH

11:30 – 14:30 **Pitching & Communication Skills** Beth Susanne, Silicon Valley Pitch Coach

COFFEE BREAK / NETWORKING

14:45 - 16:15 **Pitch Your Idea** Jury Panel of senior managers and VCs

16:15 – 16:45 Evaluation & Close out



This workshop was developed within the EU-funded research project “HEKATE” and supported by the TUHH Startup Dock. Learn more about HEKATE and Startup Dock: hekate-project.eu,

startupdock.de



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HEKATE

Entrepreneurship Workshop “Turning Ideas into Business Opportunities”
 8-10 April 2015, Hamburg

WORKSHOP EVALUATION QUESTIONNAIRE

15. Your occupation

- Academic Researcher/PhD/Post Doc Industry Researcher/Young Professional

16. How did you hear about the Workshop?

- Through the University/ School/Faculty (e.g. Mailing List, email, intranet)
- Through TuTech
- Through EIRMA
- HEKATE website
- Other

.....

17. What prompted you to join this Workshop? (select at least one)

- Personal / Professional interest
- Networking Opportunities
- Speakers and Contributions
- I was asked to participate / represent my group/ company/.....
- Other

.....

18. Are you satisfied with the Workshop organisation?

	Excellent	Good	Average	Poor	Very Poor	N/A
Venue (Accessibility)	<input type="checkbox"/>					
Workshop Facilities (room, media)	<input type="checkbox"/>					
Information prior to the Workshop	<input type="checkbox"/>					



HEKATE

Registration process	<input type="checkbox"/>					
Refreshments	<input type="checkbox"/>					

19. Please rate the HEKATE Workshop:

	Excellent	Good	Average	Poor	Very Poor	N/A
Choice of Topics	<input type="checkbox"/>					
Choice of Speakers	<input type="checkbox"/>					
Interactive Discussions	<input type="checkbox"/>					
Networking Opportunities	<input type="checkbox"/>					
Structure / Format	<input type="checkbox"/>					
Learning Materials	<input type="checkbox"/>					
Experience of working in tandem	<input type="checkbox"/>					

>>> Please Turn Over<<<

20. Which sessions or activity met your expectations at best?

-
-

Comment

.....

21. Please rate the sessions

Day 1 (Thursday)

	Excellent	Good	Average	Poor	Very Poor	N/A
Idea Development	<input type="checkbox"/>					
Assumptions & Validations	<input type="checkbox"/>					
Speed Ideas Sharing	<input type="checkbox"/>					
Business Opportunity Evaluation	<input type="checkbox"/>					
Stakeholder Management	<input type="checkbox"/>					



HEKATE

Day 2 (Friday)

	Excellent	Good	Average	Poor	Very Poor	N/A
From Idea to Project (Lars Krüger)	<input type="checkbox"/>					
From Idea to Project (Martin Mahn)	<input type="checkbox"/>					
Venturing Tools & Practices	<input type="checkbox"/>					
Pitching & Communication skills	<input type="checkbox"/>					
Pitch Your Idea	<input type="checkbox"/>					

22. Please indicate the impact of the HEKATE Workshop for you:

	Very strong	strong	neutral	weak	none	N/A
Entrepreneurship skills and tools	<input type="checkbox"/>					
Networking with industry	<input type="checkbox"/>					
Networking with researchers	<input type="checkbox"/>					
Taking more training courses	<input type="checkbox"/>					
Take actions for commercialisation	<input type="checkbox"/>					

Comment

.....

23. What is the main action point that has resulted for you? What will you be doing differently as a result of attending the Workshop?

Comment

.....

24. What was the key message that you came across?

.....



HEKATE

30. Would you like to be informed about other workshops and events related to entrepreneurship?

- Yes No

If yes, please provide your email

31. Would you like to share your email address with other participants of the workshop?

- Yes No

If yes, please provide your email

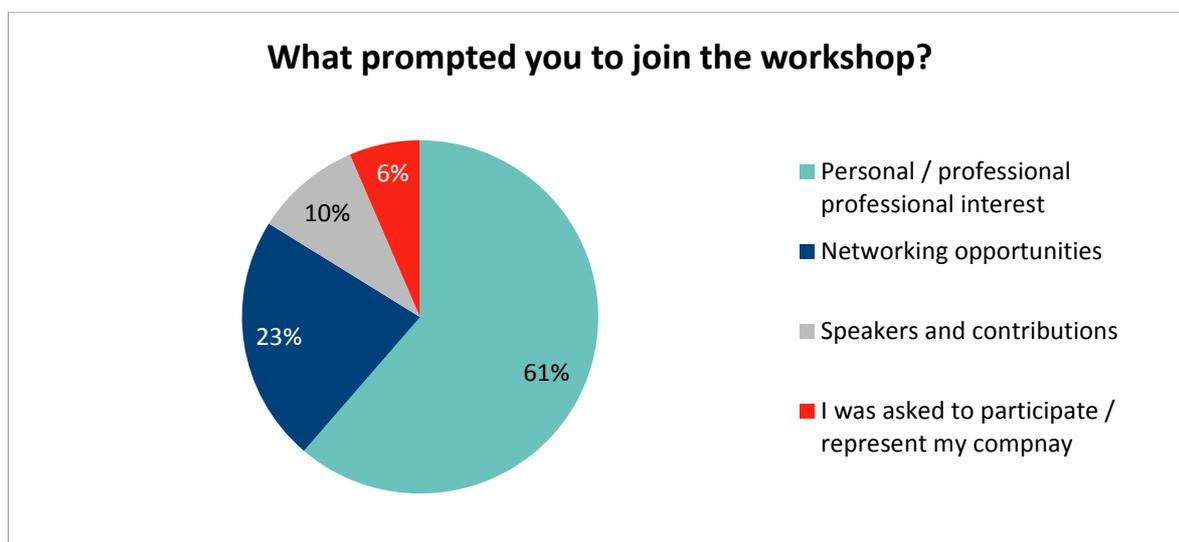
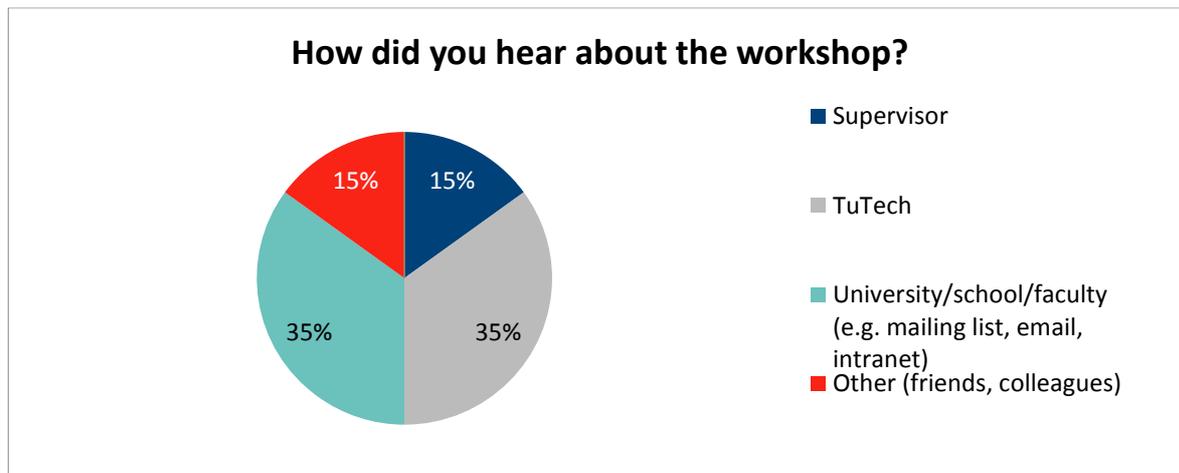


This project has been funded with support from the European Commission. This training reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

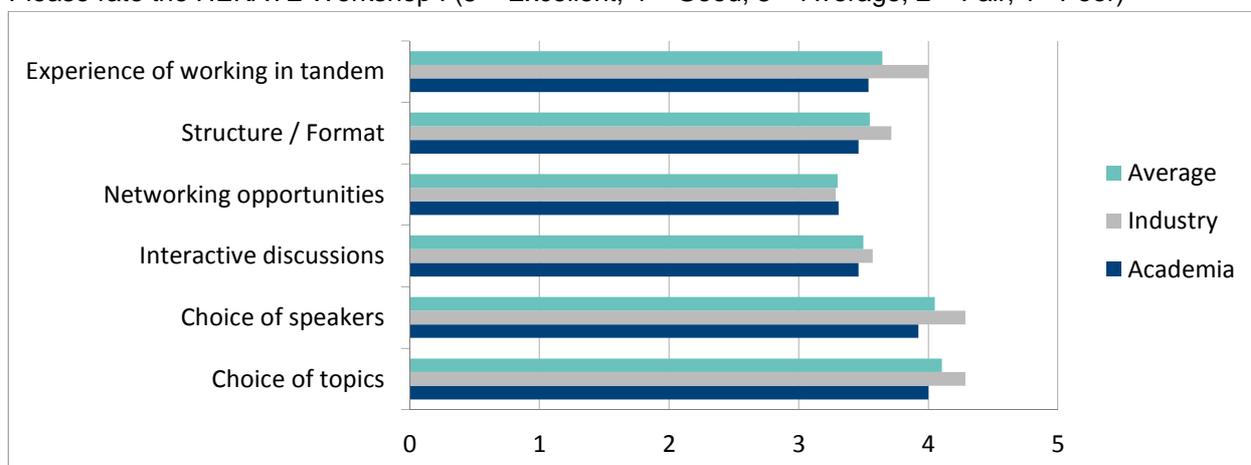


EVALUATION HAMBURG WORKSHOP I

H E K A T E



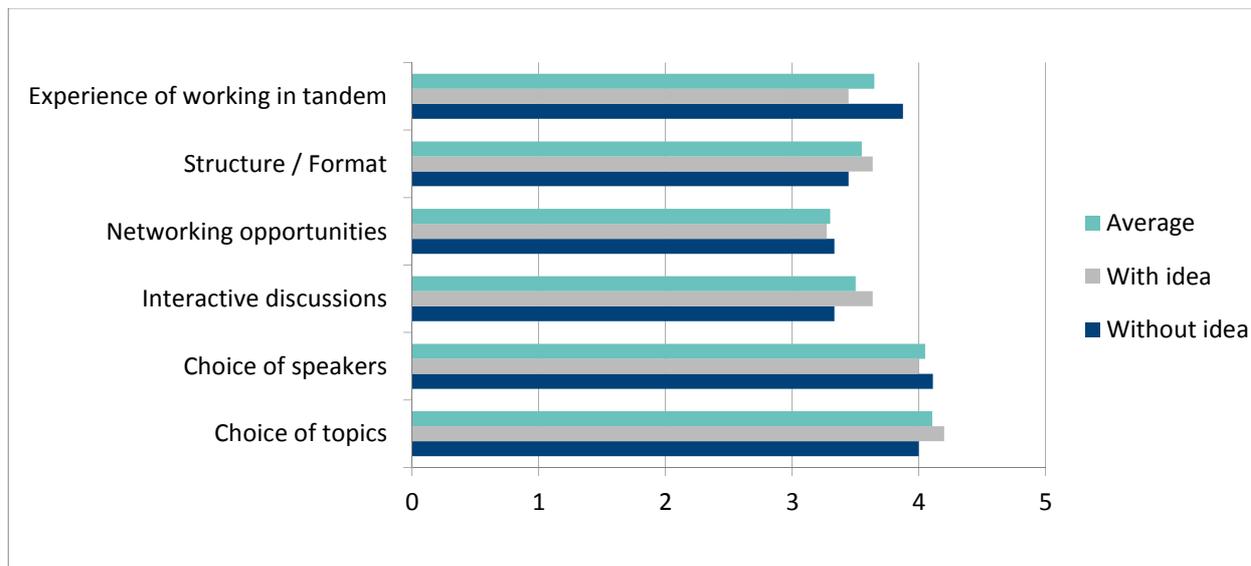
Please rate the HEKATE Workshop I (5 – Excellent, 4 – Good, 3 – Average, 2 – Fair, 1 –Poor)⁹



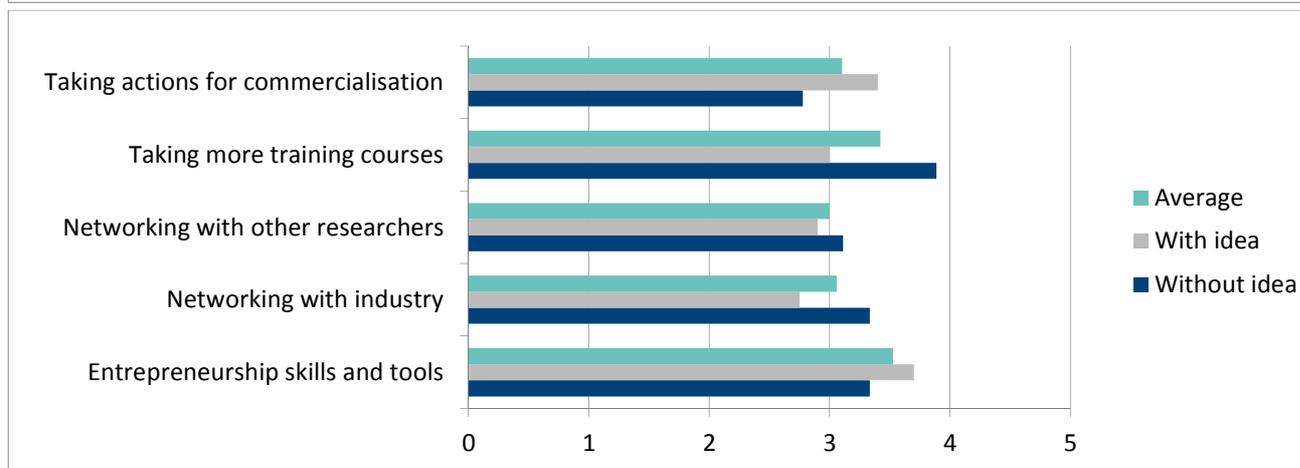
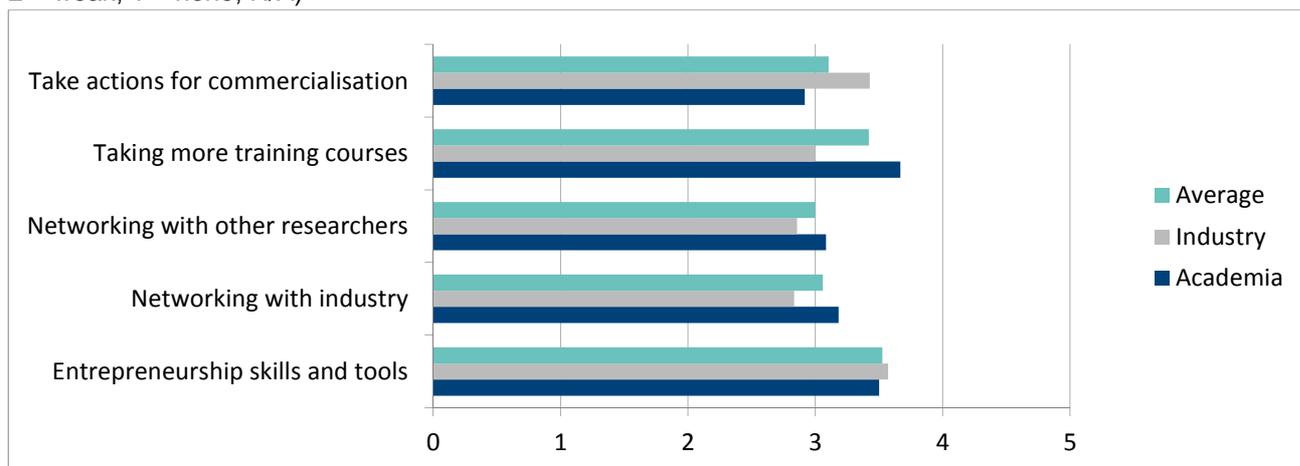
⁹ Data based on the average score



HEKATE



Please indicate the impact of the HEKATE Workshop for you (5 – Very strong, 4 - Strong, 3 – Neutral, 2 – weak, 1 – none, N/A)¹⁰

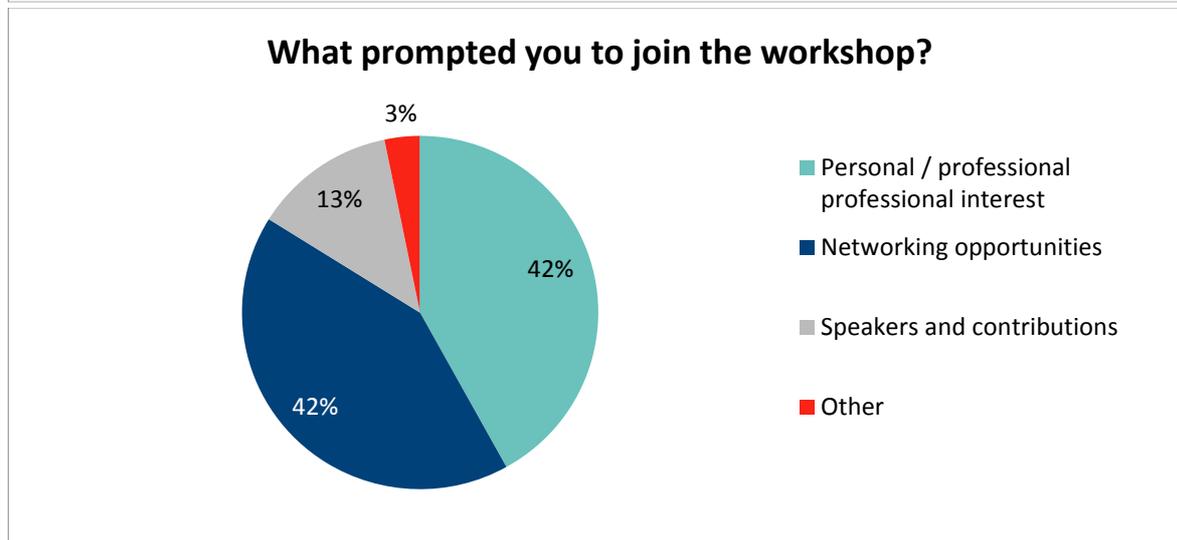
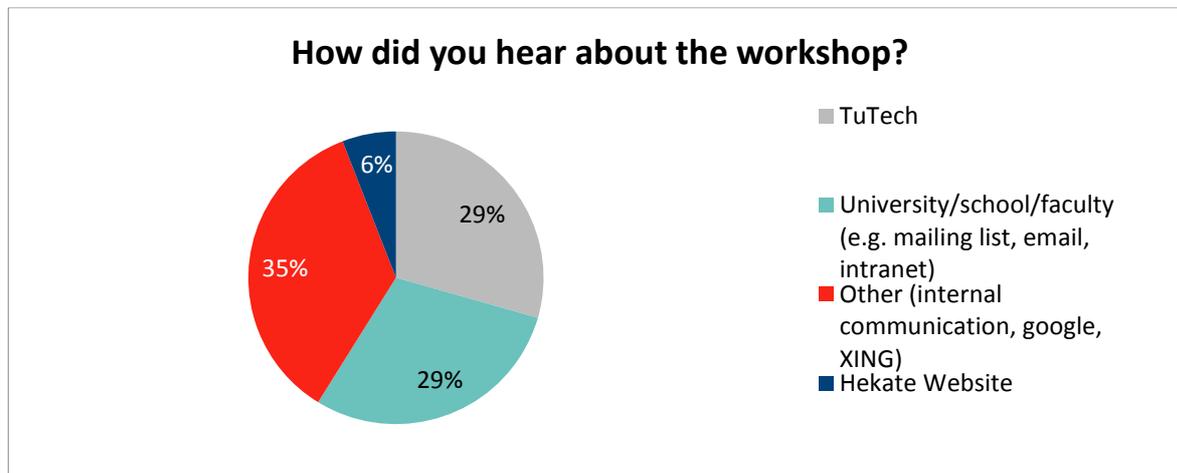


¹⁰ Based on the average score

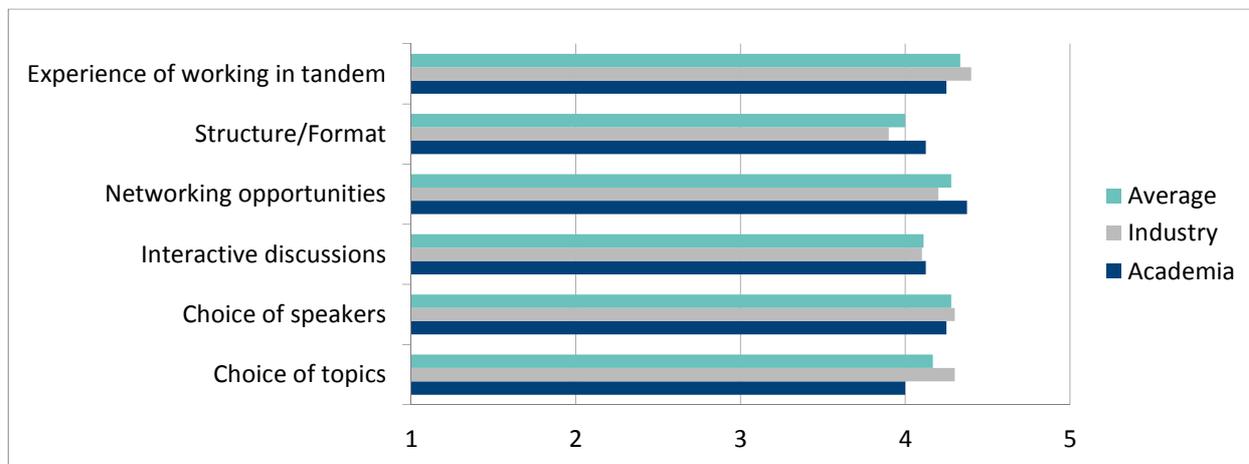


HEKATE

EVALUATION HAMBURG WORKSHOP II



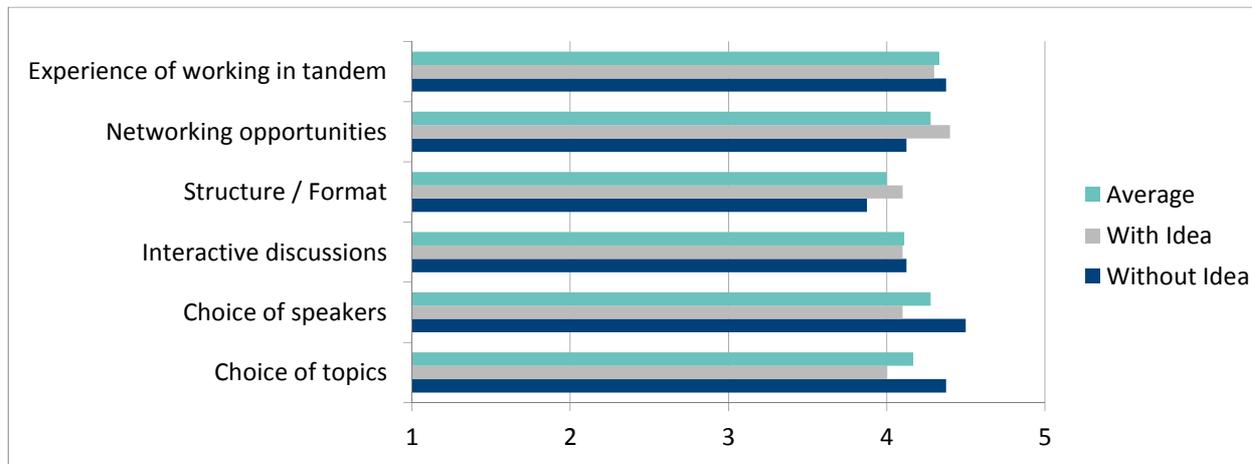
Please rate the HEKATE Workshop (5 – Excellent, 4 – Good, 3 – Average, 2 – Fair, 1 –Poor)¹¹



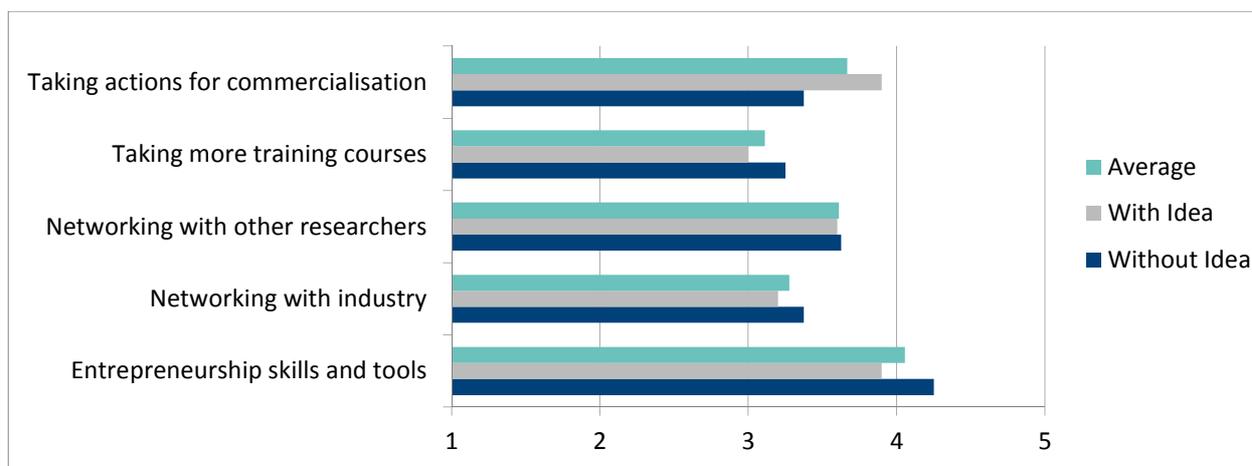
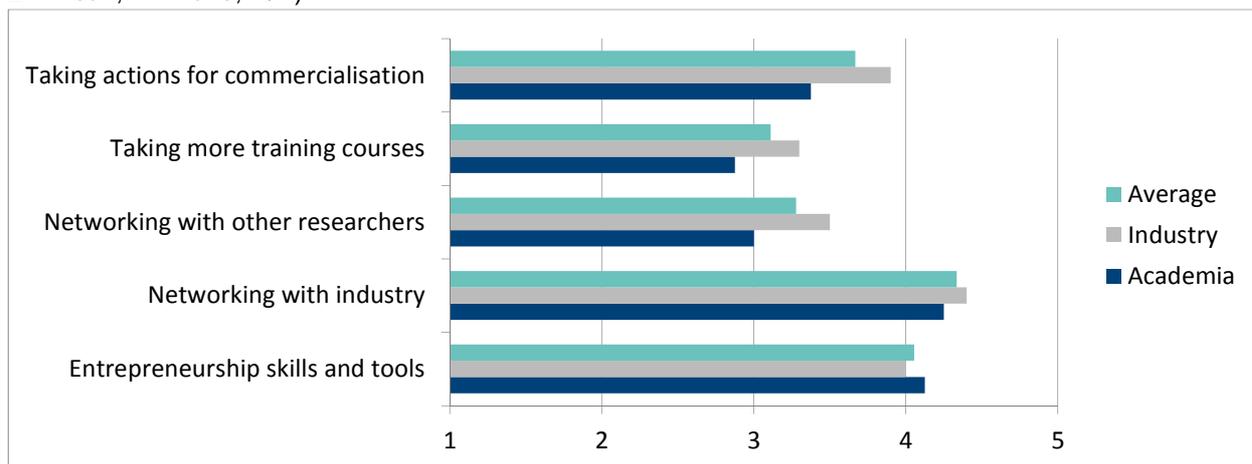
¹¹ Based on the average score



HEKATE



Please indicate the impact of the HEKATE Workshop for you (5 – Very strong, 4 - Strong, 3 – Neutral, 2 – weak, 1 – none, N/A)¹²



¹² Based on the average score