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BRINGING STANDARDISATION CLOSER TO ENTREPRENEURIAL RESEARCHERS

Abstract: *Many initiatives underlined the strategic importance of standardisation and called for more education and training about standardisation. Standardisation is recognised as an essential tool for global technological leadership and standardisation can be seen as a knowledge mobilization tool. This study aims to elaborate on the process of building consulting and training support for researchers involved in EU-funded projects and share experiences and lessons learned. Leveraging a qualitative case study approach, this research delineates the theoretical background, analyses the training needs of the entrepreneurial researchers, and elaborates on the developed model of the services and training.*

Keywords: *Entrepreneurial Researchers, Researchers Knowledge Mobilisation, Standardisation, Training*

1. Introduction

Standardisation is an essential tool for global technological leadership. The recently released European Union (EU) Strategy on Standardisation (EC, 2022a) and the United States (US) Government National Standards Strategy for Critical and Emerging Technology (US Government, 2023) underlined the strategic importance of standardisation and called for more education and training about standardisation. At the European level, standardisation is recognised as a knowledge transfer channel (EC, 2022b) and standards as a tool for the valorisation, commercialisation, and subsequent use of research results (Blind et al., 2018). The EU's research and innovation (R&I) framework programme HORIZON Europe (HE) has recently introduced an unprecedented number of calls requiring a contribution to existing standards or the development of new ones.

Many R&I projects' results did not reach their full potential in industry, markets, and society. There are many reasons for that. Among these are the unsuitability of certain research outcomes for standardisation, insufficient development, and the absence of access to standardisation processes, thereby hindering the dissemination of solutions to potential stakeholders and industries (EC, 2013). This scenario results in a collective loss, notably for researchers whose results do not reach potential beneficiaries who might be interested in applying the developed solution(s). To actively participate in the standardisation process, researchers need to have a certain level of knowledge, skills, competence, and experience in standardisation.

According to Naujokaitytė (2022), Europe is currently facing a division in research. While talent and excellence are evenly spread across the EU, there are noticeable differences in R&I performance among different regions. To improve Europe's competitiveness in R&I, especially compared to China and the US, underperforming regions must utilise their

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talent pool and technological capacity. If all regions within the EU thrive in R&I, it will significantly enhance Europe's overall research and innovation landscape. As a result, the EU has initiated various activities to strengthen the European Research Area, particularly benefiting 15 member states and a few associated countries, mostly in Central and Eastern Europe, to help them catch up (Naujokaitytė 2022).

This study aims to elaborate on the process of building consulting and training support for researchers involved in EU-funded projects and share experiences and lessons learned. The contribution of this study is twofold: it seeks to elucidate the process of developing consulting services and training for researchers on new academic disciplines (in our case, on standardisation) and highlight the importance of standardisation expertise among researchers, particularly in Central and East European countries. Leveraging a qualitative case study approach, this study delineates the theoretical background, analyses the training needs of the entrepreneurial researchers, and elaborates on the developed model of the HSbooster.eu Training Academy (TA), and the design of the training platform.

2. Literature Review

2.1. Knowledge Mobilisation

Harvard Innovation Education Fellow Tony Wagner once said: "Today knowledge is ubiquitous, constantly changing, growing exponentially... Today, knowledge is free. It's like air, it's like water. It's become a commodity... Today, there's no competitive advantage in knowing more than the person next to you. The world doesn't care what you know. The world cares about what you can do with what you know" (see Swallow, 2012). Many theoretical concepts are designed to bridge the gap between discovering new knowledge and its application (Briscoe & Persad 2021; Brownson et al., 2018). However, the critique is that "current models do not explicitly differentiate between the myriad of analytical levels at which knowledge mobilisation operates" (Brown, 2014). The term knowledge mobilisation is used for "research translation, research into practice, research implementation, research utilisation, research uptake" (Powell et al., 2017).

According to the University of Bristol (2023), the difference between knowledge mobilisation, dissemination, and impact is related to the following. Strategies for knowledge mobilisation involve sharing knowledge across different communities to generate new insights and drive change. Dissemination typically involves a one-way process of communicating research findings to specific audiences through targeted channels and planned approaches. However, knowledge mobilisation goes beyond mere dissemination and promotes a two-way dialogue between researchers (as knowledge producers) and research users, which begins from the early stages of a study, when research questions are formulated, and extends beyond the dissemination of findings. Impact represents the intended result of knowledge mobilisation; it refers to the tangible outcomes and real-world contributions of research (see more at the University Bristol, 2023).

Researchers (knowledge producers) are developing fundamentally different strategies for knowledge mobilisation than those that might affect it (Brown, 2014). Many R&I projects' results did not reach their full potential in industry, markets, and society for many reasons. Contemporary academic researchers often work in isolated teams, are focused on publishing the results of their research (publish or perish), and often lack the time or motivation to turn their ideas into solutions for industry problems or entrepreneurial ventures. In such circumstances, everyone loses – research endeavours are not developed sufficiently to be applied in practice; although knowledge exists, issues in practice are not solved, and

the gap between theoretical knowledge and practice grows. A critical aspect of knowledge mobilisation is emphasising the rationale of research activities (e.g., for whom or who will use research results and how they would be used) in the early phases of research processes.

Knowledge mobilisation is often interpreted in the context of academic researchers and university entrepreneurial practices, but there are also essential differences in that segment. According to Miller et al. (2018) – different modes of knowledge mobilisation exist for academic researchers. Some academics adopt an entrepreneurial mindset by actively seeking opportunities to support their research through collaborations with commercial partners in various informal and collaborative ways (usually referred to as entrepreneurial academics and researchers). On the other hand, some scholars focus on technology commercialisation and engage in formal modes of engagement that capitalise on specific market opportunities (known as academic entrepreneurs) (Miller et al., 2018).

2.2. Standardisation as a Knowledge Mobilisation Tool

As already stated, the motivation for and practice of knowledge mobilisation is very diverse (Powell et al., 2017; Brown, 2014). Although not often mentioned in the knowledge mobilisation theory literature, standardisation is essential for technology knowledge mobilisation. Generally, standardisation is an activity of developing standards. Accordingly, "a standard can be defined as a construct created by a meaningful, reasonable, and collective choice that enables agreement regarding the solution of existing and potential problems" (Cargill, 2011).

Generally and highly simplified, the story goes like this. Some actors (e.g., companies, alliances of companies and organisations, research institutes, universities, and many other types of organisations) have a problem and need, for many different reasons, to find a solution with others. Some organisations – let's call them organisations for standardisation – provide a place and a specific framework (e.g., rules, process, project management) for actors to develop a joint solution. Standards can be developed by companies (known as company standards), industrial and professional associations (known as industry standards) and business consortia or in national (national standards), European or regional (European standards), and international organisations for standardisation (international standards).

Written standards have existed since the time of ancient Greece (Varoufakis, 1999). World trade is impossible without standards because "standards control access to virtually every market in global commerce and directly affect more than eighty per cent of world trade" (Purcell & Kushnier, 2016). Many active standards organisations with thousands of members develop tens of thousands of standards every year that interact with the innovative decisions of most manufacturers (Baron & Spulber, 2018). How might standardisation still not be sufficiently known to the general public or even researchers? Why is it not studied more in academia?

Maybe the key argument for that is that standardisation is an industry matter. The industry develops standards for the industry. Standards are based on agreements among experts. One of the first definitions of standardisation is "the habit-forming process of the industry" (Gaillard, 1933). On the other side, the interplay of science and standardisation changed the world we are living in. Scientific discoveries of telegraph, telephone, radio, internet, mobile technologies, and many others became deployed around the globe by standards (see more at https://www.itu.int/en/history). There are many cases of how knowledge generated by scientific research finds its place in industries via standardisation, for example, in the field of audiovisual

translation (Matamala & Orero 2018), nanotechnology (Blind & Gauch 2009), ICT & biotechnologies (Saltzman et al., 2008; Blind & Grupp 1999).

However, researchers face specific challenges when getting involved in standardisation. To be understood by many diverse actors within one industry (industry-specific context) or more industries (cross-industrial context or industry symbiosis), the knowledge intended to be specified in standards needs to be codified, and the research results must be of a certain level of market readiness (Abdelkafi et al., 2018, p. 194). "Codifying specific knowledge to be meaningful across an industry requires its context to be described along with the focal knowledge. This, in turn, requires explicitly defining contextual categories and relationships that are meaningful across knowledge communities" (Zack, 1999). To be successful in standardisation, the researchers need to have a certain amount of awareness of the context and needs of a specific industry and market. In other words, a certain amount of entrepreneurial zest needs to lead researchers to be engaged in standardisation. However, not all researchers are ready to invest their time and resources in collaborations with representatives of industries and other actors in developing standards.

2.3. Dissemination of Knowledge about Standardisation

Standardisation is a practical, but not overly accepted academic discipline, especially in Europe and the Americas. Asian countries, particularly APEC nations, are at the forefront of academic education in standardisation. To enhance competence in standardisation, the respective ministries of Japan, Korea, Indonesia, and China launched programs to develop education on standardisation in 2005. The results, as outlined by Hesser (2014), became evident in 2011-2012:

- In Japan, 32 higher educational institutions offer 51 courses on standardisation.
- In Korea, there are 81 standardisation courses across 41 universities. The number of lecturers teaching standardisation increased from 50 in 2005 to 249 in 2011.
- In Indonesia, ten universities have incorporated standardisation courses into their programs.
- In China, the focus was on making standardisation courses mandatory in master's programs of engineering. Over 200 universities offer courses on standardisation.

Apart from geopolitical and economic factors, the expertise of a large pool of young standardisation professionals has played a crucial role in the "rise of China's influence and leadership in global standard-setting bodies" (Gargeyas, 2023).

Given that the majority of European researchers did not acquire fundamental knowledge about standardisation during their education, the central question remains how to introduce standardisation to someone who is already exceptional in their field. There is limited literature specifically addressing the training of researchers. Studies on entrepreneurship training offer valuable insights into certain aspects of researchers as trainees, such as the impact of intrinsic motivation (Souitaris et al., 2007) and the necessity for long-term support (Marlow et al., 2021). Long-term support is particularly crucial in the case of standardisation because these efforts should be viewed as long-term strategic initiatives that drive the creation and adoption of standards (see Xie et al., 2016).

In standardisation, as a practical discipline, possessing active knowledge and skills is highly important for influencing the standardisation process. A study by Green and Ritchie (2023) explores traditional approaches to training in the context of researchers and underscores important

aspects of the influence of training on "intrinsic motivation, making researchers self-governing", and the power of building a sense of belonging to a specific community.

3. HSbooster.eu Consultancy Services

The HSbooster.eu (https://hsbooster.eu/) is a 30-month Coordination and Support Action that offers a consultancy service to EU-funded projects (e.g. from H2020, Horizon Europe or Digital Europe Programmes) seeking guidance on standardisation-related aspects of their research. This initiative aims to assist projects in effectively navigating the standardisation landscape, ensuring their work aligns with relevant standards and maximising their impact in the market. The consultancy services are made available via an Open Call system, allowing both standardisation experts and projects to deliver and receive consultancy services.

To date, the project counts a pool of 181 recruited standardisation experts and 120 projects operating on a wide array of topics, such as health, resilience, sustainable digitalisation, green transition, smart cities, and circular economy. Experts and projects undergo a matching process based on a thorough analysis of the needs of each project and the experience and profile of available experts. Once the matching is approved by project partners, the designated experts are contacted, informed, and asked to sign a contract to deliver their service.

The HSbooster.eu consultancy service provides expert consultancy on various standardisation-related aspects of a given research project. The consultancy aims to enhance the project's understanding and engagement with standardisation processes to achieve effective results. The types of consultancy offered may be linked, but not limited to, the following activities:

- Standardisation Mapping: Identification and assessment of relevant standards applicable to the project.
- Suggestions on Standardisation Deliverables or Future Strategy: Recommendations for standardisation deliverables and strategic planning for future standardisation activities.
- Understanding Standardisation Processes: Clarification on how standardisation works, including the development and adoption of standards.
- Training Materials: Provision of training resources and materials related to standardisation processes.
- Engaging with Standardisation Development Organizations (SDOs) or Technical Committees/Working Groups (TCs/WGs): Guidance on interacting with appropriate SDOs, TCs, or WGs relevant to the project's objectives.
- Facilitating access to standards or TCs/WGs: Provision of access to standards via HSbooster.eu, which can reimburse the fees for a maximum of 3 selected standards per project. Once the coordinator or another beneficiary of a project that has applied to HSbooster.eu purchases the standard via their national standard body, the project representative can ask HSbooster.eu for reimbursement. Similarly, if the project is interested in accessing Technical Committees (TCs), Subcommittees (SCs), and Working Groups (WGs), HSbooster.eu offers reimbursement for the fee of one person per R&I project to gain access to a national mirror committee. This access enables participation in the work at TC, SC, and WG levels for a period of one year.

In addition to the one-to-one consultancy, typically delivered over a timeframe of 3 months via dedicated online meetings organised by the expert with the assigned

project (see Figure 1), HSbooster.eu is currently piloting some novel types of dedicated services for EU projects. All services of the HSbooster.eu are free of charge.

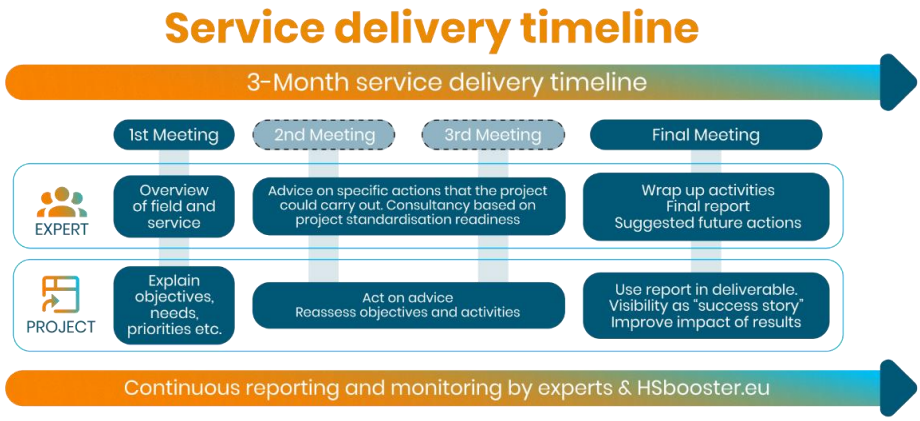

Figure 1. Service Delivery Timeline

More precisely, these additional services involve:

- Extended consultancy service: Provision of longer-term support to projects beyond the three-month timeline. Based on feedback from both experts and projects, longer-term support was specifically requested during the first year of the HSbooster.eu activities.
- Deep dive workshop series: Projects are grouped by specific calls or initiatives, such as projects funded through Joint Undertakings, EU Innovation Centre and EU Missions. A series of 3 workshops based on the needs of target projects is then delivered. Workshops can cover different topics based on the standardisation-related needs. Experts in the HSbooster.eu community are involved or specifically recruited to deliver these workshops.
- CEN Workshop Agreements (CWAs): For those projects that have a specific goal of developing a CWA, a service is offered which includes technical input and engagement support. Funding of up to €10,000 to cover related CWA costs can be offered too.

The HSbooster.eu has also developed additional resources and tools to support the project's standardisation activities, such as the Standards Orientation Tool (https://sot.hsbooster.eu/#/SOT/), providing general guidance on the first steps towards standardisation and the HSbooster.eu Training Academy, described in the next section.

4. HSbooster.eu Training Academy

Creating the HSbooster.eu Training Academy (TA) was one of the tasks of the HSbooster.eu with the aim to support research consortia to increase and valorise their research results by contributing to the creation or revision of standards.

4.1. Target Audience

Our primary audience consists of researchers engaged in EU-funded projects. Despite the specificity of our target audience, it is

important to note its non-homogeneous nature. This diverse group, including individuals from academia, industry, and entrepreneurial backgrounds, brings various motivations to the table yet shares a common interest in standardisation.

In the initial months of the project, we conducted a survey involving 21 researchers (randomly selected). The content analysis of interviews indicates the following findings:

- Researchers require a broader understanding of standardisation. Affective factors, such as attitudes towards standardisation, motivation to delve into the subject, and values regarding sharing research results, significantly influence their willingness to learn more about standardisation.
- Motivation poses a potential challenge. Similar to entrepreneurship, standardisation demands a considerable amount of time and effort, with no guaranteed outcomes, such as standards. Key questions arise: How can standardisation benefit me? What's in it for me? Researchers primarily focused on publishing with no intention of collaborating with the industry show less interest in learning about standardisation.
- Researchers are accustomed to the academic style of communication. They draw insights from the publications of fellow scientists and are more likely to be persuaded by studies conducted by other researchers.
- Time constraints emerge as a barrier to exploring areas beyond their core research focus.
- Researchers express a keen interest in expanding their networks. Participation in standardisation working groups is viewed as an avenue to connect with potential partners for future project submissions.

4.2. Methodology

In analysing what is needed to be the goals and learning outcomes of future training academies, we started with an existing study of the European market's needs for education on standardisation (European Commission, 2017). This study identified 24 core competencies related to standardisation, and we use them for the development proposals for the creation proposition for the Training Academy.

Aside from this study, two documents were essential for this phase – The International Workshop Agreement IWA 30-1 on Competence of Standards Professionals Part 1: In companies and The International Workshop Agreement IWA 30-1 on Competence of Standards Professionals Part 2: In standards-related organisations. Those documents identify standardisation professionals' knowledge, skills and attributes. The International Workshop Agreements (IWAs) aim to address immediate market needs and are developed through a workshop process outside the International Organisation for Standardisation (ISO) committee framework. This procedure ensures the participation of a wide range of interested parties from around the globe, granting them the opportunity to contribute (see more at https://www.iso.org/deliverables-all.html#IWA).

Based on the identified competencies, we developed a set of intended learning outcomes on standardisation using the experience in previous studies (Mijatovic, 2020). Further, intended learning outcomes served for identifying and systematising topics (Figure 2). For every piece of training material, we set specific intended learning outcomes.

The methodology behind the HSbooster.eu Training Academy is called Placing "why" before "how". Due to the high diversity of our target audience, we divided our activities into three levels: beginners, intermediate

users and advanced users. Generally, the Training Academy addresses the educational dimension of standardisation by providing a mechanism and accessible hub to acquire the knowledge, skills, and competencies in standardisation. Basically, we provided a framework for building expertise in standardisation. In the context of the Training Academy, we used the definition of Swanson (2007) that expertise is a dynamic state, domain-specific, with three main components: knowledge, experience and problem-solving.

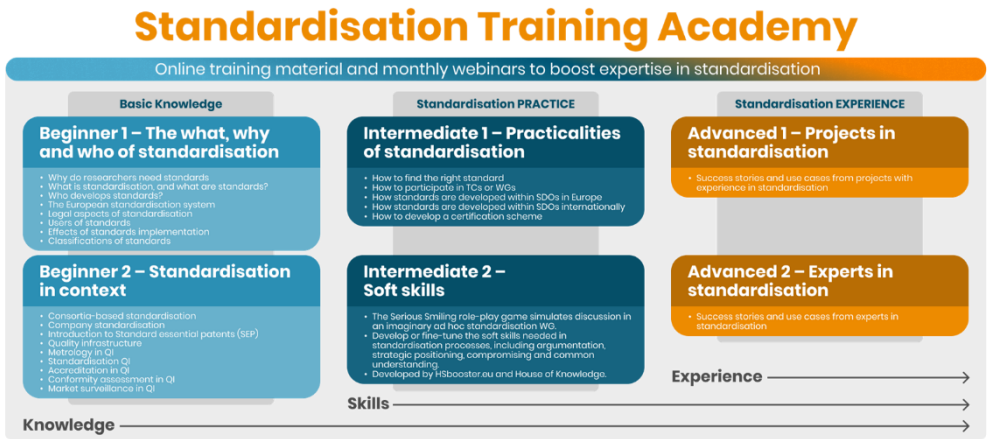

Figure 2. HSbooster.eu Training Academy: Structure

On September 27th 2022, we organised an online workshop titled "Building the HSbooster.eu Standardisation Training Academy" to check if we are on the right track (https://hsbooster.eu/events/building-hsboostereu-standardisation-training-academy). At the Workshop, we presented the methodology behind the HSbooster.eu Training Academy and received valuable advice from experienced practitioners, academics, industry representatives and researchers with experience in standardisation.

The beginner level consists of several basic, easy-to-follow resources intended to be used by researchers without previous knowledge of standardisation. We aimed to systematise relevant theory and research papers on standardisation, providing answers to questions, such as why researchers need standardisation, what standardisation is, who develops standards, who are the users of standards, etc.

The intermediate level consists of carefully crafted resources intended to be used to gain practical insights and strategies they can apply in standardisation activities. We aimed to systematise relevant practices of standards development organisations (SDOs), providing answers to questions such as how to find the specific standards, participate in standards development, develop standards, etc.

To address the development of skills needed in the standardisation process, we developed the Serious Smiley Game, intended to be played with participants at level Intermediate 2. This game aims to develop soft skills needed in standardisation processes, focusing on argumentation skills, understanding standardisation context, and strategic positioning. Active participants should be able to improve their argumentation skills, strategic positioning, building compromise and common understanding. The game has been played at standardisation classes at the University of Belgrade – Faculty of Organisational

Sciences (UoB FOS). For the HSBooster.eu, the game is improved through cooperation with the House of Knowledge (HoK).

Finally, the advanced-level course comprises in-depth case studies and practical examples from industry experts and researchers. Users can use the search feature and the advanced filters to browse the training material catalogue or can go directly to the selected starter packs and choose the most suitable one for their skills (Figure 3).

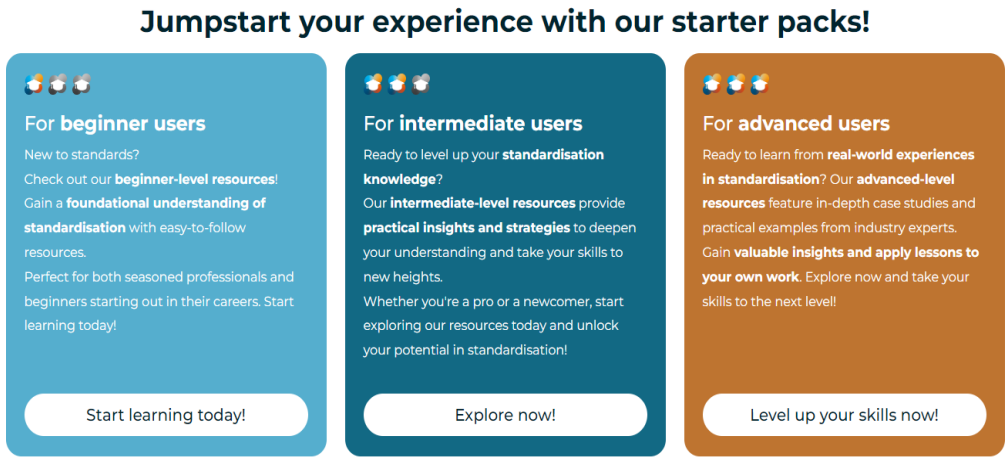

Figure 3. Hsbooster.eu Training Academy: Starter Packs

The material was prepared by 12 academics from eight European countries, and 25 written chapters with cases have been developed. Finally, on April 28th, 2023, a Training Academy was launched. All materials are available with no access restrictions (see more at https://hsbooster.eu/training-academy).

Aside from written training materials intended for self-learning, the Training Academy provides online training sessions with renowned experts to address specific standardisation aspects of interest to researchers. We carefully analyse the researchers' comments and do our best to provide the best trainers to train our target audience on specific topics. The training sessions are divided into three series: Basics of Standardisation, Standardisation in Practice and Thrive on Standardisation. We are planning to have a total of ten training sessions, and up to now, we have released seven.

4.3. Exploitation

After releasing the beta version of the training material, we are improving it constantly, and we hope that we will have all final versions in September 2024. Exploitation is in progress. The HSbooster.eu Serious Smiley Game was played at the EURAS 2023 conference and will be played at Dublin City University (Dublin, Ireland) and Linköping University, (Linköping, Sweden).

The HSbooster.eu Training Academy is well received in the standardisation community. The project reviewers assessed the Training Academy as highly relevant and of good quality. The academy's resources, including 25 chapters with more than 600 pages, have been viewed 5226 times. Seven online training sessions saw participation from 381 participants. Records of training sessions were downloaded 329 times and viewed 1410 times. All those data indicate the wide-reaching impact and relevance of the Academy's offerings. This engagement

underscores our target audience's various needs and interests, from those seeking a more basic understanding of standardisation to those aiming to deepen their existing knowledge.

5. Conclusions

To improve Europe's competitiveness, especially compared to China and the US, it is important to increase the influence of European participants in international standardisation. Many European initiatives actively develop support and training on standardisation for specific groups, such as SMEs, researchers, or particular sectors. More and more HE projects include the development of training academies in specific sectors (e.g., ICTs, blockchain, ...) in their activities. This is positive because the community of researchers to whom standardisation is becoming closer is increasing. However, we need more training initiatives to reach critical mass in specific communities (e.g., academia, startups, SMEs, blockchain, artificial intelligence (AI), biobased products, etc.), and to ensure that different communities understand each other (e.g., many innovations are interdisciplinary). Now we need the initiative to carefully plan the synergies, collaborations and overlapping with existing training initiatives.

Standardisation is an important tool for the valorisation, commercialisation, and subsequent use of research results. Standardisation, as a tool for knowledge mobilisation, involves sharing knowledge across different communities, industries, and stakeholders, and common agreements generate new insights with high potential to drive change at a global level. Standardisation, as a tool for knowledge mobilisation, can help research projects' results to reach their full potential. To participate in the standardisation process, researchers need to have a certain level of knowledge, skills, competence, and experience in standardisation.

The HSbooster.eu, a 30-month EU initiative, aims to provide support and training to EU-funded projects seeking guidance on standardisation-related aspects of their research projects. Right, it is hard to assess the resource efficiency and transformative impact on the research community of the HSbooster.eu services and Training Academy. It may be pretentious to expect a small project to have a significant impact, but some lessons were learned and a certain amount of experience was gained in working with researchers.

In our methodology, we stated that a critical factor for bringing standardisation closer to the researchers is the joint effort of academic researchers, standardisation professionals and experts from the industry. The main challenge is obtaining adequate balance and involving all relevant actors to contribute (voluntarily) to the Training Academy. Why is that needed? Standardisation is a practical discipline, not overly accepted as an academic discipline. Standards are not goals by themselves; they are tools, and successful standards are standards that are in use, that drive changes, shape practices and make them better (or not). As a human activity, standardisation is not perfect, but it is the only existing global mechanism that can join and impact industries and stakeholders.

Usually, research project teams (in our study, we call them research consortia) engaged in HE programs consist of many stakeholders (e.g., academics, practitioners who are coming from large companies, SMEs, industrial associations, and other organisations). The teams differ greatly in size, composition, group dynamics, and experience in standardisation. While some teams have partners who are very experienced in standardisation, or whose partners are organisations for standardisation, others may have no prior knowledge of standardisation. Sharing knowledge in project consortia and between project teams is very different. In some research consortia, one or few people are focused on standardisation and act in

isolation from others, and in another all partners are interested. In such a situation, a combination of consulting by experts on demand, through HSbooster service, and training might be seen as a good option. In practice, representatives of research projects were focused on solving specific problems but not on widening their knowledge and skills in standardisation. The user-friendly structure with a certain level of formality (Figure 1) of the HSbooster.eu services and consulting and Training Academy seems to provide good support to the research consortia as stated in the study by Mueller (2015).

The choice of methods is quite limited to only online contact. We could use only online contact and resources for services and training. Aside from the game sessions, all other activities are performed online. Focus on only online materials and training has benefits, e.g., available when needed, but is limited in reaching the targeted audience. However, the real impact of the Training Academy is not clearly visible. It can be said that we are still in the dissemination phase. Time is our main challenge. We can fully exploit the Training Academy through time. The impact of the Training Academy can be assessed in a few years, even if all data are carefully collected. In the following years, the feedback received from evaluators and users will be used to continuously measure the impact and improve the quality of written materials. Based on the experience with target audiences (beginner, intermediate, and advanced users), materials for new topics will be developed in collaboration with standard professionals.

References:

Abdelkafi, N., Bekkers, R., Bolla, R., Rodriguez-Ascaso, A., & Wetterwald, M. (2021). Understanding ICT standardisation principles and practice. ETSI, France. Retrieved from https://www.etsi.org/images/files/Education/Textbook_Understanding_ICT_Standardization.pdf.

Baron, J., & Spulber, D. F. (2018). Technology standards and standard setting organizations: Introduction to the Searle Center Database. *Journal of Economics & Management Strategy*, *27*(3), 462-503. https://doi.org/10.1111/jems.12257.

Bjerke, B., & Ramo, H. (2011). *Entrepreneurial imagination: Time, timing, space and place in business action*. Edward Elgar Publishing.

Blind, K., & Gauch, S. (2009). Research and standardisation in nanotechnology: evidence from Germany. *The Journal of Technology Transfer*, *34*, 320-342. https://doi.org/10.1007/s10961-008-9089-8.

Blind, K., & Grupp, H. (1999). Interdependencies between the science and technology infrastructure and innovation activities in German regions: empirical findings and policy consequences. *Research Policy*, *28*(5), 451-468. https://doi.org/10.1016/S0048-7333(99)00007-4.

Blind, K., Pohlisch, J., & Zi, A. (2018). Publishing, patenting, and standardization: Motives and barriers of scientists. *Research Policy*, *47*(7), 1185-1197. https://doi.org/10.1016/j.respol.2018.03.011.

Briscoe, P., & Persad, R. (2021). Building entrepreneurial researcher capacity to increase positive changes in practice. *Evidence & Policy*, *17*(4), 741-754. https://doi.org/10.1332/174426420X16047228925563.

Brown, C. (2014). 'Who you know and what you have to Say': An Alternative Look at Knowledge Mobilisation Theory. *International Journal of Market Research*, *56*(4), 531-550.

Brownson, R. C., Fielding, J. E., & Green, L. W. (2018). Building capacity for evidence-based public health: reconciling the pulls of practice and the push of research. *Annual Review of Public Health*, 39, 27-53. https://doi.org/10.1146/annurev-publhealth-040617-014746.

EC. (2022a). An EU Strategy on Standardisation – Setting global standards in support of a resilient, green and digital EU single market. Retrieved from https://ec.europa.eu/docsroom/documents/48598

EC. (2022b). Scoping study for supporting the development of a code of practice for researchers on standardisation (Issue May). https://doi.org/10.2777/567608.

EC. (2013). Standards and standardisation: A practical guide for researchers. 58. Retrieved from https://op.europa.eu/en/publication-detail/-/publication/db289e47-140b-11eb-b57e-01aa75ed71a1/.

United States Government. (2023). United States Government National Standards Strategy for Critical and Emerging Technology. The White House, NATIONAL QUANTUM COORDINATION OFFICE, May, 1–14. Retrieved from https://www.whitehouse.gov/wp-content/uploads/2023/05/US-Gov-National-Standards-Strategy-2023.pdf.

European Commission. (2017) Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs, Blind, K., Drechsler, S., European market needs for education in standardisation/standardisation-related competence, Publications Office, 2017, https://data.europa.eu/doi/10.2873/540387.

Gaillard, J. (1933). A study of the fundamentals of industrial standardisation and its practical application, especially in the mechanical field, pp. 33. Retrieved from https://repository.tudelft.nl/islandora/object/uuid:eb5dd4a5-6b5a-4af5-ae8a-197de0cfcc78.

Gargeyas, A. (2023). China's '2035 Standards' quest to dominate global standard-setting, Hinrich Foundation. Retrieved from https://www.hinrichfoundation.com/research/article/trade-and-geopolitics/china-2035-standards-project-restructure-global-economy/.

Green, E., & Ritchie, F. (2023). Using pedagogical and psychological insights to train analysts using confidential data. *Journal of Privacy and Confidentiality*, *13*(2). https://doi.org/10.29012/jpc.842.

Matamala, A., & Orero, P. (2018). Standardising accessibility: Transferring knowledge to society. *Journal of Audiovisual Translation*, *1*(1), 139-154. https://doi.org/10.47476/jat.v1i1.49.

Miller, K., Alexander, A., Cunningham, J. A., & Albats, E. (2018). Entrepreneurial academics and academic entrepreneurs: A systematic literature review. *International Journal of Technology Management*, *77*(1-3), 9-37. https://doi.org/10.1504/IJTM.2018.091710.

Mueller, J. (2015). Formal and informal practices of knowledge sharing between project teams and enacted cultural characteristics. *Project Management Journal*, *46*(1), 53-68. https://doi.org/10.1002/pmj.21471.

Naujokaitytė. G. (2022). What's the deal with Horizon Europe Widening? https://sciencebusiness.net/news/horizon-europe/whats-deal-horizon-europe-widening

Paolillo, J. G., & Brown, W. B. (1978). How organizational factors affect R&D innovation. *Research Management*, *21*(2), 12-15. Retrieved from https://www.jstor.org/stable/24118172.

Powell, A., Davies, H., & Nutley, S. (2017). Missing in action? The role of the knowledge mobilisation literature in developing knowledge mobilisation practices. *Evidence & Policy*, *13*(2), 201-223. https://doi.org/10.1332/174426416X14534671325644.

Purcell, D., & Kushnier, G. (2016). Globalisation and Standardisation. The Journal of SES – The Society for Standards Professionals. Retrieved from http://www.standardsuniversity.org/e-magazine/august-2016-volume-6/globalization-and-standardisation/.

Saltzman, J., Chatterjee, S., & Raman, M. (2008). A framework for ICT standards creation: The case of ITU-T standard H. 350. *Information Systems*, *33*(3), 285-299. https://doi.org/10.1016/j.is.2007.10.001.

Souitaris, V., Zerbinati, S., & Al-Laham, A. (2007). Do entrepreneurship programmes raise entrepreneurial intention of science and engineering students? The effect of learning, inspiration and resources. *Journal of Business Venturing*, *22*(4), 566-591. https://doi.org/10.1016/j.jbusvent.2006.05.002.

Swallow, E. (2012). Creating innovators: why America's education system is obsolete. *Forbes Magazine*. Retrieved from https://www.forbes.com/sites/ericaswallow/2012/04/25/creating-innovators/?sh=5ab10ecb7202.

Marlow, S., Treanor, L., Noke, H., & Mosey, S. (2021). Developing entrepreneurial competences in biotechnology early career researchers to support long-term entrepreneurial career outcomes. *Technological Forecasting and Social Change*, *164*. https://doi.org/10.1016/j.techfore.2020.120031.

University of Bristol. (2023). Impact and knowledge mobilisation. Retrieved 19.01.2024. from Retrieved from https://www.bristol.ac.uk/primaryhealthcare/researchthemes/km/.

Varoufakis, G. (1999). *Ancient Greece and Standards: The History and Control of the Materials which Left Their Mark on Greek Civilisation*. Aelos. pp. 53-88.

Xie, Z., Hall, J., McCarthy, I. P., Skitmore, M., & Shen, L. (2016). Standardization efforts: The relationship between knowledge dimensions, search processes and innovation outcomes. *Technovation*, *48*, 69-78. https://doi.org/10.1016/j.technovation.2015.12.002.

Zack, M. H. (1999). Managing codified knowledge. *Sloan Management Review*, *40*(4), 45-58. http://web.cba.neu.edu/~mzack/articles/kmarch/kmarch.htm

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