Intellectual Output 4

Innovative Governance Models for Higher Vocational Education and Training in Europe

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Executive summary

Based on the previous activities project SHINE now sets out to envision a framework for innovative governance of Higher Vocational Education and Training on EQF5. We do this by giving examples from partner countries and suggesting governance models for partner countries and the EU. We take our starting point in a four level quadruple helix model and analyse in which ways all players (Users, Labour Market, Education and Trainers, Public Administrators) on all levels (European, National, Regional, Local) can contribute to the development of European HVET.

Four level quadruple helix model

Our model and ideas for improvement derive from the user-oriented open innovation theories. Innovation in HVET policies usually come top-down from the EU and the National Agencies, but practical innovation happens locally and regionally through a more dynamic process in which all the players in the quadruple helix can be active. Project SHINE gives examples of different ways in which the quadruple helix can be involved and points to users/students contributing to the governance of HVET as an interesting possibility, which should be further explored. SHINE believes that some of the most important topics that need to be addressed in an innovative governance model for HVET are:

- Raising the status of HVET programmes on EQF5 and making them more well known to students and companies
- HVET ensuring the delivery of the right competences at the right time
- HVET contributing to innovation in local and regional SME:s

Our examples from the partner countries show that it is the relationship and the interaction between the stakeholders that make HVET so successful. Project SHINE therefore suggests the following actions to improve the innovation of governance in HVET:

- Involve all players, including students, in the quadruple helix
- Keep a close relationship between the players – this will enhance possibilities for innovation
- Communicate not only on the same level of governance, but between levels – top-down and bottom-up, and involve all stakeholders
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1. Introduction – a new paradigm for innovation

Based on the previous findings from the SHINE national surveys and peer review, project SHINE now sets out to envision a framework for innovative governance of Higher Vocational Education and Training on EQF5 on a local, regional, national and European level. We do this by giving examples from partner countries and suggesting governance models for partner countries and the EU.

Project SHINE starts out in the relatively new paradigm of user-oriented innovation models (Arnkil et al.: Exploring Quadruple Helix. Outlining user oriented innovation models. Tampere 2010 https://tampub.uta.fi/bitstream/handle/10024/65758/978-951-44-8209-0.pdf?sequence=1). According to the user-oriented innovation models, innovation doesn’t just happen top-down, but bottom-up through the contribution of active users. SHINE will show how this can happen on all levels (European, National, Regional, Local) on all levels of the HVET-system and how all the actors (Users, Labour Market, Education and Trainers, Public Administrators) in the triple, or even quadruple, helix can contribute to innovation in HVET on different levels. In order to do this we have created a four level quadruple helix model:

![Four level quadruple helix model](image)

Innovation, in an HVET context, means that the education system is able to give its customers (i.e. companies and students) exactly what they need. We believe that an innovative governance model is a flexible one, which is able to provide the right competences at the right time. In order to do this, the governance model has to include a close relationship between its stakeholders and a high level of collaboration. A research project about open innovation in Västra Götaland, Sweden 2015 – 2016, shows that a high degree of innovation (“exploring the unknown”) can be achieved only in a deep relationship, whilst a shallow relationship leads to nothing but reproduction of existing knowledge (Chalmers et al: Open innovation - metoder modeller och verktyg for samarbete och kommunikation. Gothenburg 2016 http://www.johannebergsciencepark.com/sites/default/files/open_innovation_-_metoder_modeller_och_verktyg_for_samarbete_och_kommunikation.pdf).
In line with this theory project SHINE will suggest models for deeper relationships and collaborations, which we believe will bring innovation in European HVET.

Relationships for Open Innovation (Chalmers et al 2016)
2. An innovative governance model for HVET on a local level

2.1 Italy, Istituto Formazione Operatori Aziendali

EQF5 qualifications in Italy are issued at successful completion of training programmes delivered by Higher Technical Institutes (in Italian “Istituti Tecnici Superiori”, shortly ITS).

In practice, the acronym “ITS” is used both for the training institution and for the courses. Courses are designed, planned, delivered and assessed/reviewed by public-private Foundations, comprised of at least:

- a technical or professional upper secondary school operating on the territory;
- a VET centre accredited at regional level;
- a company active in the reference business sector for the course on the territory;
- a local University or Academic research centre;
- a local authority.

Duration is four semesters (two years, i.e. 1,800-2,000 hours), of which at least 30% delivered by internships in companies. Participation is totally free of charge for learners. At least 50% of teachers must come from the labour market.

Technology domains targeted by courses are set at the national level. Foundations, however, can define specific professional profiles the address and prepare them, based on local features and needs.

The structure of each Foundations is ruled by law and includes:

- a Steering Committee (“Comitato di indirizzo”);
- an Executive Board (“Giunta esecutiva”)
- a President (“Presidente”);
- a Technical-Scientific Committee (“Comitato tecnico-scientifico”);
- a General Assembly (“Assemblea di partecipazione”);
- an accounting auditor (“Revisore dei conti”).

Representatives of all kind of stakeholders listed above must sit in the collective bodies.

Thus, the current governance system fully copies a kind of “improved” triple-helix paradigm, including schools/VET centres, universities, businesses, local authorities, their number being set according to the statutes and internal rules of each Foundation. Users (students and families) are not directly involved in governing Foundations, as described in Figure P1-2.1, even if they indirectly co-operate, through their evaluations and customer satisfaction (or dissatisfaction).

In this document, the “local level” corresponds to the territory addressed by Foundation ITS Maker, to which I.F.O.A. belongs, inside Region Emilia-Romagna and covering the provinces of Bologna, Modena, Reggio Emilia and Parma. The Foundation is performing among the best in Italy, as acknowledged by the Ministry of Education in 2015 and 20161. One of its strongest points is the huge number of representatives by all

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stakeholder categories, as shown in figure P1-2.2. Their roles and features are quickly outlined in next paragraphs. Please note that most stakeholders perform their governance action not directly, but through the Foundation.

Figure P1-2.1 – HVET governance model at local level

- **Students and families**
- **Local Public Authorities**
- **Local companies**
- **Local schools, VET centers and Universities**

Figure P1-2.2 – Members of ITS Maker Foundation by category

- **Schools, VET centres**
  - 11 Upper secondary technical and professional schools;
  - 10 VET and HVET providers.

- **Local economy**
  - 48 companies;
  - 2 professional associations.

- **Public Authorities**
  - 5 Municipalities;
  - 1 province (temporary).

- **Academy**
  - 3 Universities;
  - 2 research centres.
2.1.1 Local companies

A relevant number of companies are represented among the Foundation members. They fully cover all types of companies for the sectors the Foundation deals with: SMEs, large, and very large companies (including some world-wide famous ones, like Maserati, Ferrari, Dallara, CNH, Kohler Engines, Magneti Marelli, Schneider Electric, etc.). Their role is crucial, as it is up to them to address training curricula to outcomes really of use for the labour market. They also provide for trainers, laboratories, equipment, and internships for students. Companies sometimes live a paradox: they see the future, they can look ahead, but their needs are for today.

2.1.2 Local school system, universities, HVET provider(s)

Local (technical, in the case of ITS Maker) schools are also active in the Foundation. They provide for teachers, especially on core subjects, for classrooms, for laboratories. They co-operate to design of curricula and learning content and to competence assessment.

Universities ensure the scientific standing of programmes. They co-operate in defining outcomes and methods, and are somehow the didactic “counterpart” of companies: companies are expected to know what the market needs, universities to know how to deliver it.

Several training centres are represented in the Foundation (including I.F.O.A.). Their role is to co-operate in ensuring the practical, “hands-on” slant to curricula and learning programmes. They also offer trainers, classroom, laboratories, technical staff, and provide students with European mobility opportunities.

2.1.3 Local Public Authorities

They are also represented in the Foundation. Their role is mostly providing information to citizens, endorsing the usefulness of EQF5 programmes, and ensuring a kind of institutional guarantee of compliance with national standards.

2.1.4 Local student representatives

Representativeness of students in governing bodies of Foundations is not foreseen by the Italian law. Students provide their feedback (customer satisfaction) to the Foundation, however. And, enrolment and participation in training programmes is quite a good and severe success indicator for Foundations, as they cannot get funding (and deliver training) if not enough students choose them. In the author’s view, however, there could be room to set up some kind of local representation system for students into the governing bodies, similar to what happens at University.

2.1.5 Innovation pathways

Having this framework set, when thinking about innovation and improvement, one should remind also that the structure of the governance system is set at a national level, and modifying this framework is neither in the power nor in the willing of members of the Foundation.

Rather, notwithstanding the excellent performance level reached so far, pathways for improvement can be searched and found in the way different players interact and contribute to the functioning of the structure itself. At present, a key points for improvement, setting also an innovation in the way stakeholders work together, is: becoming more and more a hub between education and work, and promoting ITS courses and students as “innovation service providers” for the territory. To that aim, further and even more specific co-operation between all players in the quadruple-helix needs to be addressed. This means, for example:
• achieving higher commitment by companies in programme design and review;
• achieving better co-operation with other regional players, like universities;
• improving the capacity to anticipate labour market needs;
• ensuring continuous training of trainers;
• embedding European mobility in curricula;
• etc..

In order to accomplish the above, Foundation ITS Maker set priorities, deciding to focus first on anticipation of market needs, with a view to bridge the possible skills mismatch and further favour quick and profitable employability of students. The rationale for that is, being ITS Maker a hi-tech school, it is of the utmost importance to target the definition of training needs to a medium-long-term foresight over the key enabling technologies for the required professional profiles, in order to anticipate such needs. Thus, training programmes can be designed to deliver highly specialised technicians «just-in-time».

In other words, the Foundation aims at establishing a permanent foresight system, guiding the evolution of training programmes as to learning outcomes, contents, tools, assessment methods, and so on.

Specific objectives are:

• identifying and monitoring indicators to understand the evolution of key technology areas;
• anticipating skills requirements, as a combination of:
  • push, by enabling technology factors (enablers);
  • pull, by leading market factors (business drivers);
• mapping learning outcomes of profiles and programmes towards key critical technologies, through a SWOT analysis (to identify gaps, overlappings, etc.).

The methodology envisages joint work, tables attended by academy and company co-leaders, who will develop a double-entry matrix, as shown in Figure P1-2.3. Participants intervene where appropriate, depending on their distinctive competences.

![Figure P1-2.3 – Double-entry matrix for technological foresight](image)
The sequence of activities foreseen in order to achieve expected outcomes is as follows:

- Survey of existing studies and documentation;
- Definition of enablers;
- Identification of business drivers;
- Content harmonisation;
- Finalised matrix of learning outcomes;
- Matrix review and classification/ranking of enablers;
- Definition of indicators of criticality in key technologies;
- Discussion of matrix with training experts;
- Matching profiles and learning outcomes;
- SWOT analysis and definition of updated training programme.

The above model will be the core part of the local action plan to be implemented for the development of Intellectual Output 5.

2.1.6 Other remarks

It is worthwhile mentioning that ITS Maker Foundation has links with the regional and national levels. For example:

- **at a regional level**, the Foundation belongs to the so-called “Rete Politecnica” (Polytechnic network), established and coordinated by the Regional Authority and gathering all organisations delivering HVET on the territory. This aspect is further developed at paragraph 3;

- **at a national level**, the Foundation signed a memorandum of understanding with 8 Foundations in other regions, establishing a national network of ITS in the mechanics/mechatronics sector, with a view to cooperation and coordination for exchange of practices. Areas of cooperation include: sharing training and management models and tools, participating in EU learning mobilities programmes, joint training of trainers, common assessment of teachers and trainers, common promotional activities to raise knowledge and awareness about ITS programmes among the wider public.

2.2 Italy, Confidustria Veneto SIAV S.p.A

According to the Italian Law, in its narrowest sense, the ITS governance model outlines (Prime Minister's Decree 25th of January 2008, which refers to art. 7, paragraph 5c of Decree 194/2009, converted into Law 25/2010), a clear dualistic structure, based on the separation of roles and responsibilities between two bodies entrusted of the management of an ITS Foundation: the Steering Council and the Executive Committee, governed by national regulations on composition and operational methods. These two entities are supported by a Technical-Scientific Committee (CTS), in charge of supporting and advising them on the periodical revision of the training pathways. In detail, the CTS has statutory consultative and advisory functions on the evolution of the ITS industrial specialization area and the drafting of the foundation Strategic Development Plan. It also acts as liaison body to the external stakeholders to consolidate effective collaborations and partnerships with the Labour Market, aiming at establishing long-term educational and training alliances (D.P.R. 15th of March 2010, n. 87, n. 88).

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2 See [http://formazionelavoro.regione.emilia-romagna.it/rete-politecnica](http://formazionelavoro.regione.emilia-romagna.it/rete-politecnica). (Italian version. Last successfully accessed on 01.12.2016)
The IO2 Peer Review results highlights two main points of attention to address in order to improve the “EQF level 5 governance system” that can be complementary addressed at local and regional level:

a) TECHNOLOGICAL AND METHODOLOGICAL UPDATING: the seamless adaptation of the training offer to the technological evolution, with particular regard to the shifting towards the Industry 4.0 paradigm;

b) HVET STRATEGIES FOR COMMUNICATION AND PROMOTION: the low level of exposure and promotion of the ITSs system education and related training offer (e.g. EQF level 4 educational and training schools), resulting in the need for an improvement in stakeholder’s engagement strategies and tools.

With regards to the first point (a), it needs to be primarily addressed at local level, focusing on the governance structure of each ITS. Confindustria Veneto SIAV S.p.A., supported by the ITS Meccatronico Veneto (Regional HVET best practice), highlights the shared need of an improvement in the reviewing process of the training offer in the Veneto Region, ensuring its adherence to the local mechanical/mechatronics companies’ requests in a given time period, in line with the technological and market dynamics, with specific regards to the Industry 4.0 paradigm.

Since Local Relevant Players are already involved in the above-mentioned Steering Council, Executive Committee and CTS (including Companies, E&T public/private organizations and provincial officials), it is necessary to strengthen and enhance the overall management system capability to timely adapt the training pathways to the technological evolution through the development of an effective and periodical technological foresight process, along with a coherent methodological review.

Basing on the evidences pointed out by several strategic documents concerning the technological foresight function, such as:

- the Technological Roadmap (TRM – Dec.2014), edited by the Italian Technology Cluster “Intelligent Factories”;
- Report sulla Ricerca e Innovazione Responsabile (Dec.2015), Accordo Associazione Italiana per la Ricerca Industriale (AIRI) e CNR;
- the EU framework documents Factories of the Future 2020 multi-annual strategic research roadmap” (European Factory of Future Research Association – Dec.2013) and "Preparing for our future: Developing a common strategy for key enabling technologies in the EU" (EU COM(2009) 512 final),

This objective could be achieved through a rethinking of the CTS operative procedures, integrating them with a Technological Foresight Advising Group (TFAG, composed by 1 up to 3 external experts with a “variable geometry”, according to the specific topic/focus raised by companies). The choice to act on the operational routine of a statutory body enables to test, validate and potentially replicate in any ITS the potential improvement solution, adapting the general proposal to the peculiarities of the economic and social environment.

At local level, concerning the above-mentioned second point of attention (B), it seems necessary to design and implement new communication strategies and tools addressing enterprises and high schools, aiming at enhancing and strengthening the attractiveness of the ITSs overall offer. No relevant information campaigns have been conducted with the collaboration of the local PAs, as the Territorial School Offices and USRV, leaving each foundation with the task of organizing career guidance activities on their own.
The design of a comprehensive regional strategy to promote the HVET system with local adaptations to the business peculiarities and periodical reviews should solve the issue highlighted (also with the sign of formal agreements amidst the representatives of all parts).

Accordingly, at local level, the relationships pattern of all the players involved in a quadruple helix approach can be described as follows:

- **ITS students / applicants / tutors**: Within the ITS Meccatronico there are no students representative assemblies. The role of such structures would be pleonastic or redundant considering that each tutor manages a small group of 5 up to 6 students ensuring a direct relationship, debate and representativeness on a daily basis;

- **Local Public Adm.**: at local level, relevant PAs offer a career guidance service, variously structured. Municipalities (also in collaboration with high schools and vocational training centres), organise periodical Infodays and visits, along with the printing of dissemination materials. Each Municipality autonomously manages the guidance offer. By way of example:
  - Treviso, Cordinamento Reti Orientamento Treviso – COR (http://www.cortv.net);
  - Verona, Comitato per l’Orientamento Scolastico e Professionale – COSP (http://www.cosp.verona.it);
  - Informagiovani service which is active in each municipality (e.g. Vicenza, http://www.informagiovani.vi.it);

- **Labour Market**: local companies, in particular SMEs relies on the closer E&T institutions, considering their limited power to attract high-level skilled human capital compared to large firms. Therefore they need to cultivate effective and stable relations with the other 4H actors and primarily the E&T bodies (both HE and HVET), in order to maintain and increase their innovative capability, being included in remunerative value chains and hooked up to the latest technological trends, preserving competitiveness on local, regional and potentially national and European markets. Local Business Associations and Trade Unions offer an intermediary support service.
• E&T Providers - ITS governing bodies already foresee the inclusion of relevant local stakeholders in a 3H approach (PAs, companies, education and training bodies). In detail, as previously mentioned, the CTS plays the statutory role of “collector” of interests, providing technological guidance and support to the Steering Council and the Executive Committee so as update the training pathways. Other form of direct collaboration at local level between E&T providers and PAs are limited.

E&T providers ask for an increase and improvement of the support offered by local public administrations. In particular they are expected to assume the double role and function of: 1) facilitators/promoters of an institutional dialogue between training bodies and companies; 2) support and linkage on a small and limited scale between the regional smart specialization strategy (S3) and citizens, through local investments, political guidance and awareness raising initiatives (also providing feedbacks to the regional bodies concerning policies (e.g. POR ESF or POR ERDF goals and financial instruments), effectiveness and possible further development and adaptations. In this regard it must be highlighted the currently situation of uncertain arising from the on-going reform of the Title V of the Italian Constitution concerning the different State level structure and power. In detail, the abolition of the Province and the creation of several metropolitan cities (as Venice, Milan, Rome), create a “fluid” situation and an overall review of competences and powers. This criticality also applies to the Regional level.

This relationships system at local level is at the basis of an articulated training offer development process, thanks to the involvement of all the relevant stakeholders at different stages. This allows the HVET offer to support the economic context in adhering to its growth strategy and development trajectories in the long period. The strengthening of the linkage between students training needs and local companies’ requirements in terms of skills and competences will easy to match demand/supply of labour and to enhance the innovative potential of the ITS students and graduated within companies, in particular SMEs, fostering the ITS local and regional role as innovator actor and broker.

In addition, each ITS foresee its own quality management and requirement, in line with the standards and threshold established at national level. The ITS Meccatronico administered quality questionnaires to its students on an yearly basis in order to assess the appreciation on training contents, training methodologies and tools, infrastructures, timetable and learning management.

The establishment of an effective and seamless updating linkage between the HVET training pathways and the entrepreneurial environment needs could enhance the acknowledgement as innovators of the ITS students and graduated within companies, with a specific focus on their supporting role in “transforming” and adapting new technological solutions to the actual companies’ requests. Therefore ITS students/graduated will represent the essential “enablers and triggers” of the Knowledge Transfer Process (KT, Bessant, 2003), which relies on the concept of “absorption” (Cohen Levinthal, 1990), “adaptation” and “firm-specific knowledge generation” (“KT is concerned with the subsequent absorption through which the recipient (company), is affected by the source’s experiences”, Bozeman, 2000).

The flexibility of the proposed supporting instrument to the current governance structure will contribute to ensure a HVET offer which is able to overcame criticalities related to the peculiar economic circumstances affecting the typical operational horizon (short-midterm), of a company (especially SMEs), so as to reach an effective critical mass which appears essential for the enhancement of the human capital.
Within the Erasmus+ SHINE project framework, SIAV will propose and implement a Local Action Plan (LAP), in order to test and validate the above-mentioned instrument. The results of the LAP could be shared both at regional and national level, thanks to the ITS National Network on Mechanic and Mechatronics, involving 7 Italian regions (Veneto, Lombardy, Friuli Venezia Giulia, Umbria, Apulia, Abruzzi and Emilia Romagna), evaluating potential further application and/or developments (Memorandum of Understanding – MoU 20.04.2015).

In order to enhance the school inclusion it could be evaluated the possibility to offer to newly enrolled students a peer-to-peer mentorship service. Taking into account the success of this opportunity in other Countries as Sweden, this innovative aspect in the support for learners could also help to increase the attractiveness of the ITSs’ offer towards potential applicants from high schools.

By way of example, ITS Meccatronico organises open days 3/4 times per year, called “Laboratori aperti – Open Laboratories”, in which ITS students present to potential applicants and their families an overview the Foundation activities and offer.

At local level, each ITS foresees internship periods (in Italy or abroad). Therefore the application to the Erasmus+ Charter for Higher Mobility (ECHE - in line with the MIUR recognition, 2015), will contribute to further enhance ITSs return of image and exposure (both at local and regional level), raising awareness and favouring the involvement of local economic players.

2.3 Romania, Colegiul Tehnic Ion I.C. Brățianu

At local level, official players in Governing Rumanian HVE are: The School Inspectorate of Timis County, Development Committee for Social Partnership, Chamber of Commerce and Industry, Companies, Trade unions and Schools.

The School Inspectorate of County - Romania directly linked with Ministry of Education is a local educational authority, public institution, which ensures counselling, coordination and controlling activities at the highest professional standards for education and vocational training institutions.

Its main objectives are:

- to ensure the quality of the educational services offered
- to ensure equal chances and increase of participation rate in education
- to develop the schools’ autonomy to become decentralized
- to train and develop teachers professionally
- to increase the role of the educational and extra-curricular activities to shape young people’s complex personalities
- to make the national education system compatible to the European one

CLDPS- Development Committee for Social Partnership – is the author of the local action plan for vocational education. This Committee is a board including representatives of schools, companies, local authorities, trade unions and different NGO.

Local companies and institutions (in our case-hospitals).
Chamber of Commerce and Industry – CCIAT prepares studies regarding economic evolution of the region. The studies in Labour Market area determine the projection of what are necessary specialties for different sectors. This studies help schools to define the schooling plan in HVET education.

The link between schools and companies is defined right from the beginning of the vocational school. The yearly number of classes for all VET schools is planned by the Development Committee for Social Partnership, where representatives of the main local companies in the region, of the School Inspectorates, of the Local and Regional Councils, experts from VET schools and from human resources agencies, local trade unions are included. The Chamber of Commerce gives all the information about the development of the different industries and also the short and medium term forecast for the labour market. The practice activity of VET
schools is taking place mainly inside companies, so the students experience the real conditions of the future job. Thus companies actively participate in continuous improvement of the technological curricula. At the same time the involved companies overview the potential (skills and knowledge) of the prospects. Periodical job fairs, round tables and meetings between students, teachers and employers are organized, with the aim of defining the future needs, to increase the efficacy of the training process and to increase the employment rate.

2.4 Sweden, Göteborgs Tekniska College

On a local level HVET in Sweden is governed by the local steering committee. The members of the steering committee and its responsibilities are part of the ordinance Förordningen för Yrkehögskolan (2009:130) kap.4 and comes top-down from the National Agency. According to this, an HVE programme should have a steering committee consisting of:

- Members of the section of the industry affected by the training. (Members of the industry should be in majority in the steering committee.)
- At least one member of the school system
- At least one representative of the students
- The person in charge of the program, i.e. an HVE manager representing the education provider
- A representative for a university or college on EQF 6-8

This means that all the players in the quadruple helix are represented in the steering committee. It also means that all the stakeholders are able to influence the governing of the HVE programme and ensures the possibility of innovation happening bottom up locally. Below we will illustrate this with a few examples from the steering committee at Göteborgs Tekniska College in Gothenburg.

The Local Steering Committee at Göteborgs Tekniska College
2.4.1 Local HVE providers – Göteborgs Tekniska College

HVE on EQF 5-6 constitutes one of four departments at Göteborgs Tekniska College. The department is led by an HVE Manager and has a number of fulltime staff and some part time consultants. The staff has a background working in the production industry and most of them have added a teacher-trainer degree to their vocational experience. This means that the HVE Manager and the trainers can be equal speaking partners to the local economy in the steering committee. The representatives of the HVE provider are able to discuss technical innovation with the companies, but have a special responsibility when it comes to the pedagogical aspects of the training. It is they who “transfer” the competence needs of the industry into curricula and modules and it is they who should find innovative didactic methods for achieving the objectives of the training.

The HVE provider also acts as a “hub” between the companies in its network. It is Göteborgs Tekniska College who summons the steering committee and who maps similar competence needs in different companies and draws conclusions as to the need for new training programmes. The HVE provider then writes an application to the NE for HVE in dialogue with the companies and further down the road recruits the students who will later be employed by the companies. To sum up, the unique competences the HVE providers bring to the quadruple helix are pedagogical and communicational ones.

2.4.2 Local companies

The emphasis in the governing model of the Swedish HVE programmes lays on the local economy. A majority of the members of the steering committee should be representatives of the industry; both employers and employees, i.e. union representatives. The most important task of the industry is, according to the NA for HVE, to give legitimacy and relevance to the HVE programmes. The companies in the steering committee take an active part in writing the local curriculum of the HVE programme and can have direct influence on the outcome of the programme on a very detailed level. 25 companies should declare the relevance of the programme and the need for employing the students in order for an HVE application to be granted by the NA. The NA recommends that the steering committee meets four times a year. This gives the opportunity for a continuous exchange of ideas and innovation in the programmes.

An important issue for the companies, that will need attention and innovation in the local steering committees, is the time of delivery of competences in HVE. When the local companies discover the need for a certain competence, they usually need it now - and not tomorrow! For a completely new programme the time span - from the companies discovering a need for a competence, via the HVE provider applying with the NA, to the companies being able to employ graduates - is approx. 3.5 years. This is a challenge that needs to be dealt with by HVE providers and the National Agency – how can we shorten the time of delivery to our customers, i.e. the companies and the students?

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3 Approx.1 year defining competences and constructing programme, 6 months for the NA for HVE to valuate and approve it, 6 months recruiting students and implementing programme and 2 years fulfilling the programme and graduating = 3.5 years.
2.4.3 Local school system

The school system is represented in the local steering committee by two players; Academia and the public school system. In the publication “The National Agency’s view on the work of the steering committee.” the NA for HVE declares that the local school system should be represented in the steering committee in order to coordinate local vocational training resources between upper secondary, HVE, and university levels, i.e. EQF-levels 4, 5 and 6-8. Academia should also support quality assurance in post-secondary education and provide a wider view on existing vocational training in the region. Finally, Academia should bring subject knowledge to the steering committee.

In the local steering committee at Göteborgs Tekniska College you find Chalmers Institute of Technology, located in Gothenburg and one of the most prestigious institutions on EQF 6-8 in Sweden. For the last couple of years, Prof. Björn Johansson has been a valuable member of the committee. Prof. Johansson has contributed to the innovation of the HVE programmes with his expertise in industrial digitalization and with his knowledge of quality control. The local school system is represented by Yrgo, an HVE provider on EQF 5-6 owned by the City of Gothenburg. The City of Gothenburg is one of the three owners of Gothenburg Technical College and owns 49% of the company.

2.4.4 Local student representatives

In Sweden users are invited to participate on all levels of education in so called user councils, consisting of parents and/or students. For HVE on SeQF 5-6 the ordinance’s 7§ stipulates that “The students should be given insight in the activities and influence on the planning and the carrying out of the training”. The steering committee is one of many forums for this.

At Göteborgs Tekniska College every HVE class has one or two student representatives who represent their classmates in the steering committee, pass on questions and ideas for innovation and bring back information. One important issue that has been brought to the attention of the steering committee by the student representatives, is the lack of understanding for the importance of being able to combine work and studies. There have been examples of students being denied their legal right to sabbatical leave for studies and of part-time students on day shifts being transferred to night shifts, which means that they cannot go to night classes and have to interrupt their studies. The need for life-long learning possibilities will only grow stronger, for both employers and employees, and this conversation needs to be continued to secure the right of the workers as well as the needs of the employers.

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1 2016-02-01 the ordinance Förordningen för Yrkeshögskolan (2009:130) kap.4 was changed and today only HVE on EQF 6 must a have a representative of Academia in its steering committee. Since the change was made quite recently, most programmes on EQF 5 still has a representative of Academia in its steering committee.)
3. An innovative governance model for HVET on a regional level

3.1 Italy, Istituto Formazione Operatori Aziendali

For the purpose of Intellectual Output 1, we introduced two best practices, one in region Emilia-Romagna, and one in Region Apulia.

At this stage, with a view to the design and implementation of Local Action Plans, we will focus on Region Emilia-Romagna, the territory our organisation is based in, and where our Institute is directly involved in the best practice we proposed. In fact, in Emilia-Romagna there is a sound governance pattern managed by the Regional Authority.

3.1.1 Regional companies/associations

Considerations made at the local level apply here, too. A relevant number of companies are represented among members of Foundations. In order to properly represent the territory and ensure “critical mass” in all phases (programme design, delivery, assessment, review), they fully cover all types of companies for the sectors each Foundation deals with: SMEs, large, and very large. Their role is crucial, as it is up to them to address training curricula to outcomes really of use for the labour market. They also provide for trainers, laboratories, equipment, and internships for students. Companies sometimes live a paradox: they see the future, they can look ahead, but their needs are for today. The public Regional Authorities consults business and employer associations when thinking about setting up possible new programmes or while reviewing the existing training offer.

3.1.2 Regional school system, universities and HVET providers

The Regional School office is especially active in communicating about the training offer available on the territory and in showcasing activities and opportunities for students and teachers/trainers.

Universities do not have a specific coordination point about EQF5 at a regional level.

HVET providers are the Foundations, and co-ordination among them, in the framework of regional development plans are described at next paragraph.

3.1.3 Regional Public Authority

As already mentioned, the Regional Public Authority is actually the process owner for the governance of HVET at a regional level, in Emilia-Romagna.

In addition to general features of ITS courses mentioned at chapter 2, it should be noticed that:

- Opposite to the minimum required by law, regional funding is 70%, while national funding is 30%: this witnesses a strong commitment by the regional authority into HVET.
- Titles and topics of each ITS course (either existing or future) must fit into regional development plans, including the Smart Specialization Strategy, and must be strictly linked to distinctive marks of each territory; more in detail, the Regional Authority is in charge of approving the Three-year Territorial
Development Plan and Guidelines for the presentation of educational projects for higher technical courses, in accordance with the Regional Operational Programme for European Social Fund (POR ESF) 2014-2020 - Axis 3 - Education and Training.

- Since June 2011, Region Emilia-Romagna established the so-called “Rete Politecnica” (Polytechnic network) as a part of its system for education, training and research. The aim of the Network, financed through the ESF, is to provide training and learning opportunities based on the enhancement of vocational, technical, scientific and technological culture.

- It is characterized by the integration of different education providers – school system, accredited vocational training providers, universities, research centres – and enterprises, all committed to working together on the basis of their experience, expertise and excellence in the design and implementation of activities. Hence, governance is mostly in the hands of the Regional Authority, who is the decision maker and the main financing body, coordinating the work of the Foundations. Other players do not actually intervene in governance at this level. Rather, they perform at the local level, as described at chapter 2. Figure P1-3.1 mirrors this situation.

On the other side, in performing its governing role of course the Regional Authority connects with several actors, according to figure P1-3.2.

### 3.1.4 Regional student/family/citizen representatives

Representativeness of students in governing bodies of HVET at a regional level is not foreseen by the Italian law. Students provide their feedback (customer satisfaction) to Foundations, however. And, enrolment and participation in training programmes is quite a good and severe success indicator for Foundations, as they cannot get funding (and deliver training) if not enough students choose them. More, citizens are officially represented in the Regional Assembly, so in theory they can advance proposals there. However, this would be a quite time-demanding and somehow complicated process, in the author’s view.

### 3.1.5 Innovation pathways

In the author’s view, there could be room to facilitate/foster the above mentioned process of gathering and integration, for example appointing higher scores to yearly applications for funding made by foundations who envisage cooperation methods, common standards, common teaching of cross-cutting subjects, wider and embedded European mobility in curricula, and so on.
Figure P1-3.1 – HVET governance model at regional level – Region Emilia-Romagna

Figure P1-3.2 – Co-operation among stakeholders at regional level – Region Emilia-Romagna
3.1.6 Other remarks

It is also necessary to highlight that the Regional Authority, in its vest of privileged witness to the functioning of EQF5 programmes, can deservedly give an opinion on the relationships between the different governance levels. Some interesting points here are as follows:

a. national ↔ regional
   - The division of responsibilities and competences between the Region and the Ministry of Education is working quite well at present. The State decides on common standards, defines technology domains to be covered, ensures the recognition of qualifications (valid over the whole Italian territory), and set such qualifications at the proper EQF level. The Region is in charge of programming in relationship to local development strategies, of appointing Foundations who plan and deliver training, of supervising and harmonizing the training offer with a view to effectiveness and efficiency, and of assessing results in terms of employment.

b. regional ↔ local
   - The presence, involvement and commitment of companies in Foundations is a key factor to success. The stronger the local business system supporting Foundations, the better the outcomes. Indeed, Foundations including a relevant number of enterprises, active in co-operating with other players, perform much better. In fact, students oriented towards a EQF5 course are mostly looking for not only for a high qualification, but also for quick employment in a “healthy” company. Hence, active companies among a Foundation’s members make the course more attractive. As the number of participants to each course is limited, more students applying means better selection and possible subsequent better employment chances.
   - At the same time, more companies supporting a Foundation mean the possibility to start more courses, improve the number of teachers, develop “faculties” of experienced trainers, reinforce a regional (not only local) identity, reach a “critical mass” allowing a more relevant impact on the territory. The Region is also keen and ready to finance a broader training offer, in order to meet local needs of specific territories, where a sound local governance structure exists.
   - ITS courses belong to HVET. Hence, they imply exploitation of technology, no matter the economic sector they are about. Foundations should strive, to always get the best available technology, either in laboratories or at companies’ they work with.
   - Foundations should move progressively towards broader operational autonomy, better connecting to upper secondary schools/VET centres on the one side, and the labour market on the other.
   - Last but not least, Foundations should gather and integrate, in order to deliver shared services/activities to students, like for example: common training modules on region-wide topics as internationalisation, languages, access to European learning mobility (as the Region together with I.F.O.A. is trying to achieve currently), etc..

3.2 Italy, Confidustria Veneto SIAV S.p.A.

At regional level, the governance system achieves a mediation and settlement of the requests submitted by the various regional HVET actors, encompassing each local growth strategy and development trajectories in the long period.
Points of attention previously identified at local level produce their effects also on this level, influencing the management of the relationships with the Veneto Region (Education, Training and Labour Dept.), which represents the regional HVET funding institution.

With regard to the first point (A), according to the results of the IO2 Peer Review, HVET best practices rated as in the middle sector (57%), for the parameter “offer up-to-date about the regional market demands”. This highlights the difficulties faced by the ITSs system in aligning the education and training offer to the business dynamics.

Therefore, the Veneto Region will be informed of the results of the solution proposed, tested and validated at local level (strengthening of the CTS supporting tools). We expect them to consider to include the suggestions and recommendations arising from the Local Action Plan implementation on the companies needs and demands in future calls for proposal for EQF level 5 courses. In addition, the relevant regional dept. periodically convenes the ITS Committee composed by the regional ITSs referents in order to collect observations, proposals and request for reviews and amendment to the regional initiatives and HVET strategies in the mid/long-term.

Accordingly, at regional level, the relationships pattern of all the players involved in a quadruple helix approach can be described as follows.

The above infographic shows a synthesis of the relationships structure in a 4H approach at regional level:

- ITS (HVET) students / applicants – their needs and requests are collected and mediated by each ITS internal relevant structures, which are the only interlocutors recognized by the Veneto Region, along with the Regional School Office;
- Regional Public Adm. – the Veneto Region (Education Training and Labour Dept.), is the ITSs funding authority. According to the National Legislative Framework (intra DPCM 25/01/2008), it is in charge of the approval of the Triennial Territorial Development Plan and Guidelines for the presentation of
educational projects for higher technical courses, in accordance with the Regional Operational Programme - European Social Fund (POR ESF) 2014-2020 - Axis 3 - Education and Training.

At this level, other two institutions representing the National Ministry (MIUR), ensure the linkage with the national level: the Regional School Office (USRV), and the National Institute for Documentation, Innovation and Educational Research (INDIRE).

USRV’s main tasks are:
- implementing national policies, supporting the E&T providers in their local application;
- monitoring the E&T providers in order to check the efficiency of their activities and to assess the level of achievement of each educational programmes;
- identifying and collecting the training needs arising in each economic sector, in partnership with the region and local authorities;
- ensuring the coordination of the Territorial School Offices.

INDIRE main tasks (at regional level) are:
- managing the ITSs training offer database populated by each ITS separately;
- contributing to the definition of the HVET evaluation criteria;
- playing a guidance role at national level, indirectly influencing the R&I activities in the HVET field, in collaboration with the Regional Authority, the USRV and the ITSs or their networks.

In the last five years, thanks to the enlargement and improving of the HVET offer at national level, several coordinating initiatives have been launched at intergovernmental level with the inclusion of the regional PAs in order to focus on the HVET strategic role within the Education and Training panorama.

In particular, must be mentioned:


b) the State-region conference (08/2014), concerning the “Approval of the agreement between the Government, Regions and local authorities for the implementation of the monitoring and evaluation system of the Higher Technical Institutes training paths”.

c) Labour Market Regional Business Federation and Regional Trade Unions offer an intermediary support service, along with guidance and representation towards regional and national PAs. In addition, the Regional Industrial Federation, with the support of the local associations, designs and develops R&I projects at regional, national and EU level, in order to support and enhance the innovative role of the HVET system, supporting:
   a) its connection with the PAs and major research bodies/agencies;
   b) the widespread knowledge of the latest technological/methodological solutions.

d) E&T Providers - ITSs collaborate with all the PAs above-mentioned. By way of example each ITS supports the Veneto Region in:
   a) designing the Triennial Territorial Development Plan/Guidelines;
   b) designing and submitting to the competent Dept. its training project;
   c) maintaining dialogue with the regional officials, the USRV and INDIRE.
Each ITS has several peripheral headquarters in different provinces (e.g. ITS Meccatronico has operative structures in the provinces of Verona, Padova and Vicenza). Accordingly, they play a relevant role as E&T providers also at regional level.

Each ITS also manages the relations with the local High Schools in order to promote its HVET offer.

The above-mentioned point of attention (B): “the low level of attention and promotion of the ITSs system education and training offer (e.g. EQF level 4 educational and training schools), resulting in the need for an improvement in stakeholders engagement methodologies”, affects each ITS in its local context and it is acknowledged at regional level thanks to the action of the Regional School Office.

In detail, there is widespread lack of knowledge and understanding of the ITS offer and related future professional opportunities, partly due to a common rooted mind-set.

According to this situation, HE Institutions are still considered as the natural step after the diploma (EQF level 4), causing a generalized difficulty in promoting ITSs’ offer and in students’ enrolment.

As natural outcome of the displayed context and regulatory framework, from 2011 onwards, the ITS system has encountered difficulties in expanding its HVET offer. These obstacles have been overcome with a remarkable promotional and dissemination effort of the results accomplished, along with the autonomous formal establishment of functional networks to create a leverage effect.

National HVET funding mechanism negatively affects the ITS mid/long-term planning activity. Each ITS is funded by three sources:

- MIUR
- Regional authorities
- Local Companies

The Italian Ministry provides funds to each ITS on a yearly basis. Similarly, Regional Authorities yearly receive funds from MIUR and transfer to each ITS after the evaluation and approval of the training project submitted.

The situation is slowly changing, thanks, in particular, to the increasing regional/local ITS and Major Industrial Associations promotional initiatives, highlighting peculiarities of the higher professional training pathways and emphasizing the excellent results concerning employability rate (81.1% within an year after graduation), recognized at national level by the Ministry of Education University and Research – MIUR and Ministry of Labour and Social Policies - MLPS (INDIRE Performance Analysis - 2015). ITS Meccatronico Veneto employability results are in line with the national standards. Approximately the 70% of the graduated students are employed by the enterprises in which they carried their internship; the remaining 30% is employed in a regional enterprise or decides to continue its studies at university.

In this regard, the collaboration between the National Legislator and regions has also contributed to harmonize the overall HVET system. The operational guidelines developed should consolidate and further strengthen the relations between technical colleges, vocational schools, vocational training centres and enterprises, drawing up a map of the connections amidst economic and professional areas, valuable supply chains, technology clusters and technological areas of research and development.

According to the evidences arisen from the IO2, the promotional activities carried out by Business Associations and ITSs in order to be effective should be addressed primarily to:
a) the associated companies and relevant PAs (both at local and regional level), thanks to their lobbying activities and direct linkages;

b) principals and teachers of secondary schools (EQF level 4), which are called to illustrate and propose to the students the HVET offer as an alternative to HE, considering the aspirations and inclinations of each student.

Accordingly, the Peer Review highlighted the widespread need to increase the regional/local PAs commitment in developing dedicated and systematic promotional initiatives towards local companies and high schools (also with formal agreements). No relevant information campaigns have been conducted addressing enterprises and high schools, leaving each foundation with the task of organizing orientation activities on their own.

It is also necessary to point out how regional ITSs are also increasing their mutual cooperation after an initial launch and fine tuning phase of their operational routines and structures (Sept. 2011). In detail, the process of creation, reinforcement and enlargement of stable, functional and multilevel networks amidst the various HVET providers on the basis of the 6 “National Technological Areas” identified within the Jointly Decree n.8327/2011 Ministry of Education University and Research - Ministry of Labour and Social Policies, should be seamlessly encouraged (and further supported also by PAs as MIUR - MLPS and Regional Authorities).

This in order to activate a seamless and formally established confrontation/knowledge transfer process on the training path design and related contents.

3.3 Italy, Ufficio Scolastico Regionale per il Veneto

This section deals with the description of the governance model for HVET in Veneto Region. EQF 5 qualifications are delivered by Higher Technical Institutes (in Italian “Istituti Tecnici Superiori”, shortly ITS).

In Veneto Region the regional authority is the competent body. Even if the regional authority takes decisions in an autonomous way, it cooperates with other bodies in order to prevent isolation and guarantee a respectful and practical application of the subsidiarity principle. The governance model in Veneto Region turns out to be a successful one since it is based on the one hand, on the collaboration and sharing with other institutions according to their competences, and, on the other, on a spiral growth relationship that connects the bottom-up and top-down phases.

3.3.1 The institutions involved in the regional governance model

The institutions involved in the governance model are A) the Regional Education Authority (USRV) that is responsible for education policies; B) the competent department of the regional authority (vocational education and training); C) the representatives of social partners for the labour market. The participation of all these actors requires that their organizational and political diversity, that is legitimate and respectable, does not represent a difficulty. Indeed they are members of network based on a common goal to be achieved. Each member of the network learns from the others and the community is considered as a real learning organization.

3.3.2 The regional governance model

The model combines national guidelines with regional professional needs as well as development and innovation trends (for example, in Veneto “made in Italy and industry 4.0”). Furthermore the model is based on a set of rules targeted to ensure accuracy and functionality. The various process management procedures don’t need to be integrated, but should be applied in an appropriate way taking into account the final goal. The sharing of the plan among the different actors helps to overcome the presumptions of institutional supremacy of each authority.
The design of the learning pathways is in charge of different bodies acting in three areas/contexts: A) education and training (training institutions in the broadest sense, for example schools, vocational training organisations, university departments); B) research and innovation (university, research centres, etc.); C) labour market (companies). The network established among these bodies is represented by a specific legal entity: the foundation (described in the next section).

Thus we can distinguish two levels: A) institutional (decision-makers); B) operational, that is the foundation ITS that provides training courses.

At the institutional level, as mentioned above, the regional authority cooperates with USRV and the associations of social partners (trade unions of different sectors). Decisions are taken through the public consultation and decision makers work together in a specific committee. The members of the committee analyse the needs, design and share the rules on the governance, the economic resources, the definition of standards and training programs. They also prepare the annual nomination announcements, promote the various project proposals and select them according to the available financial resources and the consistency with the professional needs of the area; they monitor the progress of the courses, they intervene with adequate measures in case of critical situations; they verify the financial reports and make the payments after the conclusion of the course; finally they periodically analyse the employment rates. This governance model implemented only in Veneto was successful as shown from the national assessments performed by an external body.

3.3.3 The structure of the foundations in the regional HVET model

ITS foundations operate according to the model designed at national level.
In Veneto the regional authority has decided to limit the number of Foundations. Each of them has its own administrative accounting office located in the legal head office and several operational branches located in different areas of the region. This structure allows both to optimize resources through economies of scale and to rely on a qualified staff at different levels (administration, accounting and teaching area).

The ITS Foundation consists of

- the school that also issues the qualification
- accredited training organizations
- research centres or university departments
- local companies and professional associations
- local bodies

Some of these actors are founding members and take management decisions; others are members who work for the success of the initiatives but have not a decision-making role.

The management structure is composed of:

- the president: in Veneto governance model the presidents are mainly from the business world and this is an extremely positive aspect
- the steering committee (founding members, at most about ten)
- the Executive Council, (5 members)
- the assembly of participants (currently also 50-60)
- the Scientific and Technical Committee: it is composed of one or more opinion leaders; it is responsible for the decisions on the professional profile and the design of the learning pathway.

Other positions are:

- the director: he/she performs mainly organizational management tasks; his/her role is fundamental but in order to avoid an excessive abuse of power, the director is usually supported by collaborators
- in each operational branch of the foundation there are a coordinator of studies and a tutor.

The framework is however adjusted according to the different logistic and organizational needs of each area.

The governance model of the Veneto foundations meets the needs of the territory characterized mainly by SMEs and not by large companies. In this context, governance bodies have different sizes (the number of members vary in the territories) and the assembly of participants is very important.

The role of local authorities is very important. They don’t only give a financial support to the foundations but they are always in close contact with the members of the foundations in order to understand their needs and expectations and try to meet them.

The various parties contribute in disseminating and enhancing training initiatives.

The relation between the institutional and operational/executive level is essential.

The regional governance model for HVET can be visually (Figure 1) represented by a triangular prism where the vertices of a base represent the implementation level and the other three the institutional one. The top down and bottom up processes allow the flexibility of the model and avoid an excessive tightening.
The model provides for mutual enrichment processes, especially when the production area is characterized by medium-small enterprises and even micro companies like in Veneto region. The mutual enrichment is fostered through a link/relation with:

- the companies directly involved in the learning process of students (co-design, dual organization, project work, etc.);
- the training organizations (responsible for students’ guidance, training of teachers).

The model becomes the key element in building a bridge between the production chain and the training. It is a real double helix based on a double process.
4. An innovative governance model for HVET on a national level

4.1 Italy, Istituto Formazione Operatori Aziendali, IFOA

HVET programmes are governed by national regulations, must fit into regional action plans (*in Italian* “Piani di intervento territoriali”), and are funded jointly by the State (through the Ministry of Education) and by the Regions. By law, each Region must provide for at least 30% of the national funding (in other terms, national funding equals maximum 76.92% of total, and regional funding must be at least 23.08%). As highlighted also in previous chapters, understanding this double dependence—national and regional at the same time—is crucial, in order to consider any kind of possible improvement in governance models.

A special focus has been put recently by the Italian Government on ITS programmes, particularly those dealing with innovation and technology. The recently approved National Plan for Industry 4.0 for years 2017-2020 includes increasing by 100% students enrolled into ITS programmes relating to I4.0 topics.

The current national governance model is described in figure P1-4.1.

![Figure P1-4.1 – HVET governance model at national level](image-url)

4.1.1 National representatives of labour market

Social parts are always consulted by the Government, especially by Ministries of Education and Ministry of Labour, due to strong implications between HVET and employability.
4.1.2 National Education and Training Authorities

On behalf of the Italian Government, the Ministry of Education sets the legislative framework. Its National Agency for Education, INDIRE:

- develops and manages the database of the ITS, collecting and monitoring the whole available learning offer for Tertiary HVET;
- cooperates in definition of monitoring and assessment criteria and lays out monitoring reports;
- carries out research activities, to identify and analyse structural, organisational, didactic and development elements common to more ITS, in order to share them, provide for guidance at regional and local level, and foster innovation processes.

4.1.3 National HVET/Other national authorities

There is no official HVET authority in Italy, apart from the above mentioned. However, the Ministry of Labour, either directly and through its National Agency INAPP\(^5\), and the State-Region Conference\(^6\), regularly cooperates with the Ministry of Education for the implementation and evaluation of the HVET system.

4.1.4 National Students representatives

Students are not directly involved at the national level in governance of HVET. In the author’s view, this offers great room for improvement and innovation, e.g. organising a representation system in order to consider students’ opinions in training programming and delivery.

4.1.5 Other remarks

There is some turmoil at present in the Italian Education/University system about making programmes more and more respondent to the labour market needs. Universities realise that they are not always providing the skills required by companies. At the same time, Universities do not always consider EQF5 programmes “sufficiently qualified” to bear an academic stamp. On initiative of the Conference of Rectors of Italian Universities (in Italian CRUI, Conferenza dei Rettori delle Università Italiane), the (former) Italian Government endorsed the development of new academic pathways at level 6 with a strong focus on professionalism. Ideally, such pathways (in Italian, Lauree Professionalizzanti) should better prepare university students, especially in technical fields, for immediate employability. They should:

- be fully governed by Universities, even if with some relationships with companies;
- last three years;
- look at the French IUT and the German Fachhochschulen as “models”, even if with some differences;
- all in all include one year of formal training, one year of technical vocational training, one year of internship on-the-job;
- start in October 2017 with some pilot courses;

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\(^{5}\) INAPP: Istituto Nazionale per l’Analisi delle Politiche Pubbliche (National Institute for Analysis of Public Policies) is the new name (since 01.12.2016) of the National Agency of the Ministry of Labour, formerly known as ISFOL (Istituto per lo Sviluppo della Formazione Professionale dei Lavoratori, Institute for the Development of Vocational Training of Workers).

\(^{6}\) The “Conferenza permanente per i rapporti tra lo Stato, le Regioni e le Province autonome di Trento e Bolzano” is a permanent council acting to favour cooperation and political negotiation among the State and the Regional public administrations.
- be different from similar degrees, experimented some 20 years ago and heavily unsuccessful.

At the moment, it is not clear among the rest, yet:

- how they should relate to/complement EQF5 courses;
- how they should be funded;
- who will be the trainers apart from University professors;
- if, when and how the process will go on, after the recent fall of the Italian Government, following the resignation of the Prime Minister.

In any case, this possibility is perceived as jeopardizing the survival of EQF5 programmes in Italy by ITS Foundations.

### 4.2 Italy, Ufficio Scolastico Regionale per il Veneto

The national governance model for HVET, laboriously and late designed if compared to other countries, is not theoretical but based on a real interpretation of HVET. HVET indeed, represents an extremely innovative education segment from many points of view. It is not a simple and good vocational training opportunity but it has to meet a number of requirements:

- HVET represents the non academic higher education; in order to be a successful alternative for students, it has to offer quality training courses, that should be comparable to the university ones and at the same time deeply differentiated
- the learning outcomes to be achieved at the end of the learning pathway should ensure a fast access to the labour market and the possibility to find a good job
- HVET courses should train/prepare professional resources that can become innovation units in the different sectors. At the end of the course students should have acquired different competences in order to work both in a company or a research centre.

The model:

- involves a plurality of actors in the education sector (universities, training institutions, schools) that don’t act in a hierarchical relationship, but in a differentiated and functional way;
- enables to design a standard of the professional profile that combines the professional and the learning activities;
- promotes the recognition and enhancement of the educational value of the job with a gradual consolidation of mutual trust between businesses, students and professionals/experts.

#### 4.2.1 The actors involved

The challenge is complex and requires the participation and collaboration of several people at institutional/decision-making level, in particular those who are responsible for designing guidelines and rules as well as providing the financial resources.

Also at national level the model can be visually represented by a triangle (triple helix) where the sides are the institutions, the labour market and the training and research world. The national governance model for HVET is the result of a collaboration that involves the Ministry of Education (MIUR), the Ministry of Labour, the regions and the representatives of the business world. The participation of universities and research centres is limited.

Again the foundation is the legal entity for the management. Each foundation is composed of representatives from the school, the training institution, the university - research centre, the enterprise and the local body.
It is a legal entity of private law which administers public resources. The weaknesses of the foundations deal with the staff who is often lacking and the organization that is not always well structured.

4.2.2 Swot analysis

From the beginning three training courses lasting two years finished (2011-13; 2012-14; 2014-16) and currently two training courses are in progress (2015-17 second year; 2016-18 first year). Below we point out:

a) strengths that need to be maintained and implemented

- a good employment rate guaranteed by an on-going relationship between education and labour market that covers the common design, the management including internships in companies, the support of the company in designing the training course, the support in the search for a job
- the structure of the professional standard and the training program based on the interconnection between professional and training needs that are matched into a matrix
- bringing together material resources from different sources (Ministry of Education, regional authority, etc.) and intangible ones (services, materials and space)s provided by the partners.

b) weaknesses that should be overcome

- few visibility and knowledge from families, schools and companies. It should be therefore designed a guidance plan according to the target group that can represent national and local needs and at the same time have an effective link with other European countries
- too limited financial resources. It is hoped to overcome the experimental stage and definitely implement the model
- shortage of a common organizational model to especially facilitate those who are starting out. It is therefore necessary to define a common model that is not based only on the identification of the different actors but on the definition of a set of certain rules

c) threats

- becoming organisations offering poor quality training courses that do not meet employment needs
- opportunities

- the strengthening of a non-academic higher education course by bridging the gap with other European countries and reach the EU benchmark of 40% of people having completed some form of higher education. At national level, therefore it calls for a greater collaboration, especially with CRUI (Conference of Italian University Rectors). If, from one hand, it should be strengthened the correspondence between ECVET and ECTS, from the other, the non academic higher education must have specific features and characteristics that differ it from the university
- be the most important player in creating technical and professional networks that can match the education with the labour market
- lack of a dialogue with the secondary education organisations. It is necessary to enhance not only the guidance strategy, but also the relation with teachers and students of secondary education. Furthermore let innovations have positive consequences on companies and schools.
4.3 Germany, Westsächsische Hochschule Zwickau

4.3.1 Higher Vocational Education (HVE) in Germany

For the HVE in Germany, in general, a finished vocational education is required. In Germany, these include further educations with graduation exams, for example for master craftsmen, master tradesmen in industry (both with EQF level 6), certified IT-specialist (EQF level 5), etc. The offers can be classified in the tertiary education level. The prerequisites are at least a degree from secondary level II (ISCED 3).

*Who governs HVE in Germany (on national level)?*  
*How do innovation of legislation, guidelines and quality control, etc. happen?*

4.3.2 Political system and administrative structure

In Germany, legally the 16 federal states are sovereign states with sovereign tasks. They each have their own executive, legislative and judiciary authority, which results in a second decision level besides the national level. The federal states essentially have the responsibility for the education system and culture. This leads to the result, that in Germany the school and education systems are partly very diverse. The diversity of the responsibilities for HVE and education in general through the cooperation of the Federation and the Federal States can promote the competition for the best ideas, concepts and education models and strategies, as well as the permanent adaption to societal changes. However, to ensure a minimum of similarity and comparability, the Standing Conference of Ministers of Education and Cultural Affairs (in German: KMK) of the federal states was established, which meets three to four times each year. The KMK develops the frame curricula for the vocational schools.

In the field of the vocational education, the Federal Government has the competence for the vocational education in the companies. The federal states each are responsible for the vocational education in the schools and thus for the vocational schools.

![National Governance Model HVE](image)
4.3.2.1 Legal foundation for the HVE

There is no single national agency governing only HVET in Germany. All formalities about HVET are governed by the diverse institutions regulating HVE. The main part of legislation, standardization, updating and quality control happens top-down by several players, which will be shown in the info graphic.

Generally, the Vocational Training Act (in German: Berufsbildungsgesetz (BBiG)) provides the framework for the vocational education. It was fully revised in 2005. The players who developed the BBiG were the Federal Ministry of Education and Research (in German: BMBF) in collaboration with the corresponding line ministry, as well as the Federal Institute for Vocational Education and Training (in German: BIBB). Additionally, there were the social partners of the trade union, of the employers’ side and the chamber organizations included in the development. The law provides two possibilities for HVE. By § 53, the Federal Ministry of Education and Research, in agreement with the actual responsible line ministry, can enact training regulations. By § 54, the actual responsible chambers can enact regulations if there no regulations enacted by § 53. In the majority of the cases, the chambers enact the regulations. In 2011, there were about 90 regulations provided by the ministry and circa 300 by the chambers (Bundesministerium für Bildung und Forschung, 2011). There is also the Crafts Code (in German: Handwerksordnung/ HwO), which regulates the diverse advancements in education in its scope, such as for “Meister” (in English: master craftsman) degrees (Bundesministerium für Bildung und Forschung, 2011).

A very positive aspect is, that qualifications, which become necessary specific for the region or the industry, can be developed and implemented quickly by chamber regulations.

For “Fachhochschulen” (in English: Universities of Applied Sciences), where students can receive degrees starting with EQF levels 6, the regulation is embedded in the German Higher Education Framework Act (in German: Hochschulrahmengesetz). With the federalism reform in 2006, the framework legislation competence of the federal government was deleted from the basic law. Thus, the federal states can each differ from the regulations developed by the federal government.

4.3.2.2 Official Players

On Government Level: The Federal Ministry of Education and Research (in German: BMBF)

The Federal Ministry is divided into eight Directorates-General (Federal Ministry of Education and Research, 2016). One of them is about Vocational Training and Lifelong Learning. The remit of the Ministry is to perform various tasks under its terms of reference under the German Basic Law. The most important tasks are to provide support for the gifted, to foster young research talents and to promote international exchanges in training and further training, studies and science, and to work in association with the federal states of Germany “to shape vocational training provided outside of schools, continuing education and training as well as training grants” (Federal Ministry of Education and Research, 2015).

On Government Level: The Federal Institute for Vocational Education and Training (in German: BIBB)

The BIBB is recognized as a centre of excellence for vocational research and for the progressive development of VET in Germany. It prepares the apprenticeship regulations, conducts research projects and also offers funding and consultation for further vocational education. It is organized into four departments with 16 sections and a Central Services department. Their tasks and responsibilities are to develop and update initial and advanced education and training regulations for recognized vocational qualifications. “The range of
regulatory instruments extends from training regulations for vocational education and training for people with disabilities through to advanced education and training qualifications at master’s degree level. The regulatory work is based on academic research analyses with a vocational focus as well as on the evaluation of existing regulatory instruments. The BIBB uses implementation guides to support businesses in the implementation of high-quality training.” (Federal Institute for Vocational Education and Training, 2016).

On Government Level: The Standing Conference of Ministers of Education and Cultural Affairs (in German: KMK)

The KMK meets three to four times each year and develops the frame curricula for the vocational schools. It also plays a part to coordinate and develop education in the country. “It is a consortium of ministers responsible for education and schooling, institutes of higher education and research and cultural affairs, and in this capacity formulates the joint interests and objectives of all 16 federal states” (Kultusministerkonferenz, 2016). They have the task to agree upon uniformity and comparability of certificates and degrees, to work towards the protection of quality standards in schools, vocational education and universities, and to promote the cooperation of institutions of education, science and culture.

The development of the German Qualification Framework (GQF) was prepared through the common responsibility of the Federal Ministry of Education and Research (BMBF) and the Standing Conference of Ministers of Education and Cultural Affairs (KMK).

Social Players:

The economic training partners are industry, trade, crafts, agriculture, independent professions, public administration, health services and more than 900 independent education institutes. The tasks of the social partners on national level are the participation on the development of vocational educations/ standards, and recommendations for all areas and aspects of vocational education (Hippach-Schneider, Krause, Woll, 2007).

The chambers on national level have tasks assigned by the national government, but also function as stakeholders of their members. On national and political level, their national networks represent the interests of their member-companies and they are also part of the steering committee of the BIBB, which prepares, develops and updates VET regulations. On regional level, they have the task to consult companies, register apprentices, to certify the professional competence of the trainers, execute examinations and to lead the social dialogue, which is one of the most interesting and most important points where innovation can start.

4.3.3 Innovative Approach

We agree on the view of the Swedish project partner, that for the area of HVE, innovation means to be close to the customers’ needs, thus to keep continuous contact with the students, the companies and the vocational schools. The chambers are the next possible level, where their interests can be addressed to.

There must be a higher degree of flexibility, when it comes to contents, which are needed currently and in the future. Therefore, we also agree on a governance model, which provides a closer relationship to the stakeholders and fosters collaboration, thus keeping the approach going top-down and adding bottom-up, where it is useful. In Germany, all players who are involved in the HVE by law already have approaches to keep these contacts and collaborations, for example by research projects, which identify current national demands. However, they always collect information top-down, when they say. In the sense of Life Long Learning, the stakeholders must work closer together and they should pursue a sustainable development of
transparent, efficient and integrated education systems. Generally, education should be handled as a public good, because it is not only about the professional qualification, but also about the development of personality and responsible citizens.

The closest relationship to the companies, training partners and students are within the chambers’ organizations. They are responsible for the social dialogue, which makes them the point where it would be very useful to add a bottom-up approach. There should be a system developed and included, which offers an easier and fast way for companies, students and the education institutes to report their needs to the chambers, whenever they feel it is needed. Also the chambers’ organizations should then report these to BIBB more frequently, which should be changed into a system running automatically and openly all the time, so that regional demands can lead to updates of regulations of contents etc.

*Suggested model for innovation in HVE on a national level*
4.4 Sweden, Göteborgs Tekniska College

There is no regional level for governing HVET in Sweden. All formal HVET is governed on a national level by the National Agency for HVE. All innovation of legislation, guidelines and quality control happens top-down from a national level to a local level. Today there is no official table for dialogue with the quadruple helix on a national level and the writer will here give a few suggestions, shown in the infographic below, for a deeper relationship, which the writer believes would bring a higher degree of innovation in Swedish HVE.

4.4.1 National Agency for Higher Vocational Training

The National Agency for HVE gets its commission and its funding from the National Department of Education. The NA is responsible for financing and quality control of HVE programmes on EQF 5-6 and has also been given the task to implement the Swedish EQF-system, SeQF. In 2015 the national agency introduced “The council for the national framework for qualifications” as part of its work with the SeQF. The council consists of 13 representatives of different national agencies and interest groups and assists the NA in defining on which SeQF-level a competence belongs.
The members of the council represent the full quadruple helix and in this sense it is a forum where all stakeholders can bring in to the SeQF-system. But what if the council was expanded to cover not just the SeQF:s, but all aspects of HVE on a national level, as suggested in the first infographic? This is an interesting perspective which the writer believes would bring innovation to the system and synergies for all stakeholders and the writer hopes that the NA can be inspired to give extended responsibilities to the council for the national framework for qualifications.

4.4.2 Industry – employers’ organizations

The industry is represented in the council for the national framework for qualifications by both employers’ organizations (“The Confederation of Swedish Enterprises” and SKL – “Swedish Association of Local Authorities and Regions”) and by employees’ organizations (LO –“The Swedish Trade Union Confederation” and TCO – “The Swedish Confederation of Professional Employees”).

With the introduction of the SeQF and the application-round of 2016, the NA for HVE has stepped up the requirements for a national standardization of professions within the SeQF. This calls for a common understanding of descriptors and competences within a certain industry. Today this work takes place in the local steering committees. It is understood that the local HVE provider, when writing a new application, needs to secure the competences for a certain profession with the whole industry, in order to pinpoint the exact SeQF-level for this profession. For a local provider this is extremely difficult. For an HR-department at a single company, it is perhaps expecting too much, to ask for a thorough understanding of the SeQF-system in
relation to its competence needs. We believe that the employers’ organizations could take on a bigger responsibility here. An organization like Teknikföretagen, (“The Technical Employers Association”) can, unlike most SME:s, muster the competence and the financial resources to be an initiated speaking partner on a national level. They can adapt a wider, long-term view on vocational training for the whole (production-) industry and represent its members in dialogue with the quadruple helix on a national level.

4.4.3 The HVE Association

There are several associations and interest groups for HVE providers and Göteborgs Tekniska College is a member of two them: On a national level we find Yrkeshögskoleförbundet (“The HVE Association”), which represents approx. 165 providers from all regions in Sweden. The association works for a long-term development of HVE and higher funding for HVE-programmes, but also protects the legal rights of the HVE providers. There are also regional organizations for HVE providers; on the west coast of Sweden we find Yh Väst (“HVE West”). Today Yh Väst focuses on communication and recruitment of new students, but has a potential to be an important partner in driving specific regional educational interests, like the automotive industry or coastal issues, on a national level.

As mentioned above, Yrkeshögskoleförbundet is part of “The council for the national framework for qualifications”, but we believe they could be an even more important player in the future development of HVE.

4.4.4 Citizens and the National Student Union

In Swedish universities on EQF 6-8 there is a long tradition of student unions. These unions form a national organization called the SFS, “The National Student Union”. SFS represents the students in matters important to them, such as student accommodation, health insurance for students and in 2016 SFS has focused on raising the status of pedagogic competences in higher education. SFS is also represented in the council for the national framework.

Of the 49 members of the national union not one represents students in HVE on EQF5-6. A member of the board of the national union, Charlotta Tjärdahl, explains that there are no legal impediments for HVE students to be active in the national union and that they welcome all students. Still no student representatives for HVE are members of SFS. From this one might conclude that the form of the HVE programmes and the demographic of HVE students differ from university students in ways that might affect the interest in union work, but also that there is a lack of tradition of union work (on a national level) amongst HVE student representatives.

The writer believes that a model in which individual citizens or associations with an interest in higher vocational training, have a direct channel on a national level for bringing attention to their needs in terms of flexibility (part time, computer based, recognition of previous experiences, validation) and accessibility (special needs, financing, combining work and studies) would strengthen the HVET governance model. The writer thus invites the National Agency for HVE to look into how a model for this could be designed.
4.5 Rumania, Colegiul Tehnic Ion I.C. Brătianu

4.5.1 Higher Vocational Education (HVET) in Romania

In Romania, vocational formation (VET) in formal education contexts is ensured through two complementary systems: the initial VET formation and the continuous VET formation. By the initial VET formation, the human resources get a qualification which allows obtaining a job and, than, by the continuous VET formation, professional career development all life long, in concordance to the requests of labour market, in a continuous development, and to personal expectations.

Within the ensemble of vocational training system, the Post-Secondary School began to be an important piece in occupying some key-positions within the economic companies or the service issuers. The advantages of tuition by this program are the relative short length of time (2 years), the chance of getting an over-specialty, subsequent to attempting the classes of a technical high-school, elaboration of a curricula in a local development meant to respond to the employers’ real demands of qualification, the quick possibility of reaching a job.

4.5.2 Administrative structure

HVET programmes are governed and curricula by the low of education. All the activities are established by the Ministry of Education.

The objectives and action directions have been established on an average and long term, as well as the professional formation system (VET- vocational education and training) to respond to the continuous economy, society and individuals changing demands, increasing therefore the flexibility and making guarantees for the coherence of the entire system.

4.5.3 National level

The Ministry of Education is the national authority for pre-university education (including HVET) is responsible for developing and implementing policies related to provision of training and qualifications assessment.

Sectorial committees are the bodies responsible for definition and validation of standards and qualifications, and in collaboration with the Ministries of Labour and Education, for HVET policies.

Regarding quality assurance of HVET schools activities a main role is played by CNDIPT (National Centre for Technical and Vocational Education and Training) and ARACIP (Romanian Agency for Quality Assurance on Pre-University Education).


Romanian Agency for Quality Assurance on Pre-University Education- RAQAPE

RAQAPE accomplishes:

The external evaluation of quality of education offered by pre-university schools and by other educational organizations;

The authorization, the accreditation and the recurrent evaluation for pre-university school units.
The purpose of the external evaluation made by RAQAPE is:

- To certify the capacity of the school units to meet the customers' expectations as well as the quality standards;
- To ensure the protection of the key and the consequent customers of the study programs, by producing and disseminating information about quality education;
- To play a role in the development of a "culture of quality" in pre-university education organizations;
- To recommend to the Ministry of Education and Research policies and strategies in order to improve the quality of education.

4.5.4 Innovative Approach

The connection between HVET Providers and Local Companies must be improved in order to facilitate a good adaption of CDL (Local Curricula Development) to necessity of Labour Market. The diversification of qualifications. Including in Local Actions Plan the prevision about evolution of Industry and Services at local level, who can influence the design of schooling plan. Enhancing of e-Learning in HVET schools.
4.6 Croatia, Obrtničko Učilište - ustanova za obrazovanje odraslih

4.6.1 Higher Vocational Education (post-secondary education) in Croatia

Vocational education and training (VET) plays a major role in Croatia. Overall responsibility for HVET lies with the Ministry of Science and Education supported by the Agency for VET and Adult Education (ASOO).

The 2009 VET Act strengthened cooperation through increased involvement of line ministries, social partners, chambers of trades and crafts, the employment service, professional associations and other stakeholders. It also established multipartite VET sector skills councils that informed VET on the needs of the labour market and higher education. Since the 2013 Act on the Croatian qualifications framework (CROQF), 25 sector skills councils cover general, vocational and higher education.

Prerequisites for post-secondary vocational programs access includes occupation-relevant VET school diploma or VET training diploma and/or certain law-defined number of years of experience. In other words, there is vertical progression from EQF level 2, 3 and 4 direct to EQF lvl 5 as explained in Intellectual output O1. EQF level 5 in Croatia includes Specialization programs on the level of Adult education institutions, Master craftsmen exams and Short-cycle study programs with less than 150 ECTS point. For its EQF 5 programs, Adult Education Institution must get positive opinion by Agency for vocational and adult education and approval by Ministry of Science and Education (MZO), Master craftsmen exams regulated by Crafts Act and conducted by Croatian chamber of trades and crafts and Short-cycle study programs registered by the Polytechnic or schools of professional higher education and Universities with the acquired consent of the National Council for Higher Education. The last mentioned is conducted in very small extent or it is not conducted at all anymore due to poor response and weak comprehension of EQF lvl 5 in higher education and it's possibilities.

**EQF lvl 5 Components in Croatia**
Who governs HVET in Croatia (on national level)?
How do innovation of legislation, guidelines and quality control, etc. happen?

4.6.2 Political system and administrative structure

On national level HVET is governed by Ministry of science and Education and through Agency for vocational and adult education which tasks are to develop qualifications based on competences and learning outcomes, continuous alignment of education with Labour Market Needs, build VET system that enables lifelong learning and mobility, define roles of teachers in learning outcomes oriented system and to establish quality assurance system.

Special emphasis is given to enhancement of system’s quality, and guidance and assessment of educational process according to measurable learning outcomes, that is according to what an individual knows, understands and is capable of doing at the end of the learning process, and in line with individual’s and society’s needs, economic development, higher employability and social inclusion. Reform and development of a modern HVET system in Croatia is based on the Vocational Education and Training System Development Strategy of the Republic of Croatia 2016-2020 and the Vocational Education and Training Act.

Among its main tasks, Agency develops new and modernizes existing HVET curricula based on VET qualifications, i.e. competences and learning outcomes, which reflect the needs of labour market and further education. Important role in the process of harmonization of HVET system with labour market needs have Sector Councils, which encompass representatives of all partners and stakeholders in Vocational Education and Training.
Key role in VET have the teachers. So Agency gives a lot of attention to the professional development and training of VET teachers, through organisation and implementation of professional exams, implementation of procedures for their promotion, and organisation and implementation of professional trainings.

On the other hand, Croatian chamber of trades and crafts is founded by the Law and within HVET, for the needs of trades and crafts, its Education Department conducts master craftsman’s exams (names the members of the exam boards, supervises the exam procedure and issues master craftsman’s diplomas), conducts vocational competence exams and is involved in all forms of retraining into trade and craft professions.

Vertical progression in HVET in Croatia

One of the positive administrative indicator of HVET system in Croatia is vertical progression from EQF lvl 2, 3 and 4 on lvl 5. It can be done through Master craftsmen exam which is an example of how to recognise formal, unformal and informal acquired knowledge.
4.6.3 Official Players

4.6.3.1 On Government Level: Ministry of Science and Education (in Croatian: MZO)

Adult education system comprises the entire process of learning intended for achieving rights on development of personality, teaching for employability:

- the acquisition of qualifications for the first profession,
- retraining,
- acquiring and developing professional knowledge,
- skills,
- competencies and
- teaching for active citizenship.

The adult education system is based on these principles:

- Lifelong learning;
- Rational use of educational opportunities, territory and accessibility of education for all on equal terms in accordance with their abilities;
- Freedom and autonomy in choosing the way of style, contents, forms and methods;
- Accepting diversity;
- Professional and moral responsibility from stakeholders in adult education;
- Guarantee the quality of educational offers;
- Respecting the personality and dignity of each participant.

According to the Law of adult education (Official Gazette, no. 17/2007), adult education can be carried as formal, non-formal, informal and / or self-directed learning.

Legislative and normative framework of adult education system in the Republic of Croatia includes:

- Law on adult education (Official Gazette, no. 17/2007);
- Law on Vocation Education (Official Gazette, no. 22/2013);
- Ordinance on standards and norms and the manner and procedure of determining the fulfilment of conditions in adult education institutions (Official Gazzette, no. 129/2008, 52/2010);
- Ordinance on public documents in adult education (Official Gazette, no. 129/2008, 50/2010, 61/2014);
- Ordinance on content, form and method of keeping and storing and protecting andragogial documents (Official Gazette, no. 129/2008);
- Ordinance on register basis in adult education (Official Gazette, no. 129/2008)

According to the national Strategy of Education, Science and Technology (Official Gazette, no. 124/2014) special attention is given to the field of adult education and achieving the four goals:

- To provide preconditions for increasing involvement of adult citizens in the process of lifelong learning and education;
- To improve and expand learning, education and training with work;
- To establish a system of quality assurance in adult education;
- To improve the organization, financing and management processes of adult education system.

Registration of adult education programmes:

- Adult education programs are:
  - Program for elementary adult education
  - Program for high school education
  - Program for secondary vocational education
  - Program for lower vocational education
  - Program for retraining
  - Program for training
• Program for skill improvement + specialization programs on lvl 5

According to the Act and other regulations, adult education programs can be implement by institutions that are registered for the field of adult education.

Institutions that want to implement adult education programs have to obtain the approval for implementing the adult education programs by the authority of Ministry of Science, Education and Sports in the Republic of Croatia.

The decision of approval is issued on request of the institution, and after completing the administrative procedure.

**4.6.3.2 On National level – Agency for vocational and adult education (in Croatian: ASOO)**

The role of Agency is described above. Adult education and training specialization programs (EQF lvl 5 included) are developed by the AE providers. After its development, institution is obliged to receive positive expert opinion from the Agency for Vocational Education and Training and Adult Education.

In procedure of providing expert opinion to the Agency, institution has to deliver request and programs in attachment to e-mail.

On request, along with information about institution (name and address of the institution, e-mail and telephone) it is necessary to include titles of programs for which the expert opinion is requested. Expert opinion on each program is delivered by post to the institution address.

Upon receipt of positive expert opinion by the Agency, institution submits Request for approval for implementation of program to the Ministry of science and education.

After entire documentation is submitted, Ministry appoints a committee that determines fulfilment of material – technical, personal and spatial conditions. In case when committee determines that all the conditions are met, Decision of approval for implementation of program is issued. Based on Decision, institution attains right to start implementing program.

Due to numerous inquiries and in line with expert and advisory role of Agency for Vocational Education and Training and Adult Education, they developed:

- Guidelines to adult education institutions – from idea to public document
- How to successfully teach adults

Templates for development of adult education programs:

- Template for development of educational programme for education and training
- Template for development of educational program for acquiring competences in adult education

For development of AE programs on lvl 5 in accordance with CroQF and its Law, AE institutions has to follow Methodology for development of VET occupational standards, qualifications and curricula, which ensures that the needs of employers are incorporated in VET educational programs and in that way enable competitiveness of VET students on the labour market, and conditions for lifelong learning.

This document describes formal methodology for development of VET occupational standards, standards of qualifications and curricula. It describes links between particular processes and corresponding quality assurance control.

Methodology lists who is in charge of which process. Document also contains copies of all relevant forms.
Methodology can be used by those who desire to gain insight into overall process, without exceeding details, in order to understand links between different institutions involved in development process and also to realize key processes in development and approval of qualifications.

For easier development of VET curricula, Agency for Vocational Education and Training and Adult Education has developed Vocational Education and Training Information System (VETIS).

VETIS compiles and enables processing of all relevant data regarding schools, students, employees, school equipment, school buildings and facilities, student homes, student registrations for competitions, teacher registrations for professional gatherings etc., needed for analysis, planning and management of vocational education and training. VETIS modules are:

- Support for regional and state competitions in all disciplines
- In-service teacher training
- Support for the development and maintaining of pedagogic standards
- Registrations and enrolments
- Professional exams and promotion of teachers
- Croatian Central Office for Training Firms (SUVT)

Within VETIS Agency for Vocational Education and Training and Adult Education has established Croatian Central Office for Training Firms (SUVT) for popularization and affirmation of entrepreneurial competencies and entrepreneurial activities as a transversal skills needed with vocational skills. By establishing SUVT Agency for Vocational Education and Training and Adult Education supports the development of key and vocational competencies of our students. At the same time this represents a support for the development of a knowledge based society in which students, teachers and schools need to have their special place and special meaning.

4.6.3.3 On National Level: Croatian Chamber of trades and Crafts (in Croatian: HOK)

Within the tasks stipulated by the Law on Trades and Crafts, Croatian Chamber of Trades and Crafts pays special attention to the education of its human resources, particularly by conducting regular education on the secondary school level and retraining and upgrading of tradesmen and potential tradesmen in the form of lifelong education. The Education Department is organized into teams in order to provide educational services on the whole territory of Croatia.

In cooperation with vocational schools and the ministries responsible for vocational education, the Department organizes activities specified by laws and regulations which define its scope of work in the first place within regular school system for the needs of tradesmanship. It is involved in crafts licensing, admission of pupils, practical part of apprenticeship training and it organizes and conducts control and apprenticeship exams. In order to increase the number of pupils enrolled in trades and crafts’ programs as much as possible, special attention by the Department is paid to promotional activities. The most significant event among them is “I want to be a master craftsman”, promotion of trade and craft professions traditionally taking place every year.

Within further education for the needs of trades and crafts the Education Department conducts master craftsman’s exams (names the members of the exam boards, supervises the exam procedure and issues master craftsman’s diplomas on EQF lvl 5), conducts vocational competence exams and is involved in all forms of retraining into trade and craft professions.
Master Craftsman Exam is regulated by the Ministry of Entrepreneurship and Crafts and conducted by the Croatian Chamber of Trades and Crafts. The master's exam is the highest level of education in craft’s professions in which one acquire professional qualification and title of master craftsmen. After successful passing of master’s exam master craftsmen acquires the 5th level in according to the Croatian Qualifications Framework (CroQF). It is associated with the same level of education in European Qualifications Framework (EQF) and thus provides competitiveness and mobility on the European labour market. The regional chambers of trades (20 chambers) and crafts are conducting Master exams. A master craftsmen exam is assurance of quality because of its recognition of formal, non-formal and informal acquired knowledge.

In order to enable high quality education in craft workshops, the Education Department organizes courses in work didactics for master craftsmen - vocational teachers with the recognized status of master craftsman and provides the necessary textbooks and manuals within its “Master” edition for modern and efficient teaching.

Significant activities of the Education Department are connected to cooperation with the competent bodies of state authorities, institutions, and associations in Croatia and abroad to the aim of mutual exchange of experiences and further support of vocational education.

4.6.4 Recommendations for improvement of the governing of HVE

4.6.4.1 Strengths

- HVET programs developed in cooperation with world of work
- Shorter education cycles
- Education connected with practical exercises (50:50)
- There are some existing strategic directives for HVET development
- Good connection with local and regional government
- Perception of world of work regarding PHE/HVET students competences are positive
- Joined development programs with industries
- Widening access to HE: improving social dimension
- Help decrease differences in regional development

4.6.4.2 Recommendations

- Better connection with world of work
- World of work influence to study programs creation
- E-learning and modernisation of learning approach with emphasis on practical exercises
- Institutions to influence new industrial activities
- Establishment of Regional Centre for PHE excellence
- Connection of HVET institutions with regional and local government on joined strategic development project
- Networking of HVET institutions on regional level
- Introduction of quality parameters because inside quality control varies from institution to institution
- Change of Act on Quality assurance regulating programs
- Financing mentor work on employer site
- Attracting international students (especially from the region, due to EU diplomas)
• Increase level of secondary school quality
• Implementation of CQF (Croatian) and a chance for schools that are proactive to move faster
• Introduction of new strategies/ directions from government
• Raise awareness in the society on the importance of HVET education
5. An innovative governance model for HVET on a European level

Just as on a national level, public administration is, of course, the most important player in the governance of HVET on a European level. There are several EU organizations contributing to the development of European education and training, such as institutions (the European decision making organs, the Directions General, their agencies like the EACEA and the CEDEFOP), associations representing social parts (ETUC, BusinessEurope, UEAPME, CEEP, ETUCE, EFEE, Eurochambres), and networks (EfVET, EURASHE, etc.). In this chapter we will describe the governance of HVET by the public administration in Brussels and give a few suggestions as to ways in which the other players in the quadruple helix could be more involved in the innovation of European HVET.

5.1 Public Administration

General framework

Policy making at the European level is not of course always a simple matter. The EU is a “big country” with over 500 million inhabitants, united in diversity! HVET, as a part of Education and Training, follows the “regular” decision-making process adopted by EU institutions. Each EU country is responsible for its own education and training systems. EU policy is designed to support national action and help address common challenges, such as ageing societies, skills deficits in the workforce, technological developments and global competition. Education and training 2020 (ET 2020) is the framework for cooperation in education and training. ET 2020 is a forum for exchanges of best practices, mutual learning, gathering and dissemination of information and evidence of what works, as well as advice and support for policy reforms.
In order to ensure the successful implementation of ET 2020, Working Groups composed of experts nominated by member countries and other key stakeholders work on common EU-level tools and policy guidance.

What has been done so far

In 2009, ET 2020 set four common EU objectives to address challenges in education and training systems by 2020:
1. Making lifelong learning and mobility a reality
2. Improving the quality and efficiency of education and training
3. Promoting equity, social cohesion, and active citizenship
4. Enhancing creativity and innovation, including entrepreneurship, at all levels of education and training

It is well evident that programmes at EQF level 5 or similar can be a tool for all challenges, with special reference to the first and the last one. The same way, they can provide for a strong contribution in achieving many of the objectives set by ET2020, like:

- at least 40% of people aged 30-34 should have completed some form of higher education
- at least 15% of adults should participate in lifelong learning
- the share of employed graduates (aged 20-34 with at least upper secondary education attainment and having left education 1-3 years ago) should be at least 82%

In 2014, the Commission and EU countries engaged in a stocktaking exercise to assess progress made since the 2012 Joint Report and help prepare the next priorities for cooperation in education at European level. Drawing on the conclusions from the stocktaking, the European Commission has proposed six new priorities for 2016-2020, adopted at the November 2015 Education Council:
1. Relevant and high-quality knowledge, skills and competences developed throughout lifelong learning, focusing on learning outcomes for employability, innovation, active citizenship and well-being.
2. Inclusive education, equality, equity, non-discrimination and the promotion of civic competences.
3. Open and innovative education and training, including by fully embracing the digital era.
4. Strong support for teachers, trainers, school leaders and other educational staff.
5. Transparency and recognition of skills and qualifications to facilitate learning and labour mobility.

At the same time, the Riga conclusions of 22 June 2015 proposed, among the new set of medium-term deliverables in the field of VET for the period 2015-2020, “promoting work-based learning in all its forms, with special attention to apprenticeships, by involving social partners, companies, chambers and VET providers, as well as by stimulating innovation and entrepreneurship”.

Next steps

All these set the direction the EU is heading to for HVET. Keywords here are: employability, work-based learning, digital skills, teacher training for digital education, the role of management in promoting modernisation of education, quality assurance, permeability, inclusion, and the common values of freedom, tolerance and non-discrimination through education. The Working groups are taking care of proceeding along these lines. Their progress is regularly updated on the European Commission’s web pages.

5.2 Labour market

The labour market is the final customer of education and training. Since many years one cannot speak about education or training, without associating them, to some extent, to employability and employment. Many organisations are active at a European level, representing the labour market. They are among the stakeholders institutions regularly revert to, in order to understand needs, gaps, future directions to head to. As mentioned at previous paragraph, representatives of European associations (employers, trade unions, chambers of commerce and crafts, etc.) are constantly involved for example in Working Groups of the
Commission. More, such associations, or even single, huge companies take part in strategic and pilot projects, experimenting new pathways, strategies and tools.

One interesting point here would be: how do they ensure the “vertical” (top-down and bottom-up) flow of information? Moving top-down, the risk is not being able to “downsize” the broad and long-term policy vision of the EU to the local context, providing enterprises, very often SME, with more theory than practice. On the opposite, moving bottom-up, the risk is bringing to the European level too much synthesis, in order to encompass all grassroots requirements, or too general (generic) issues. Hence, European labour market organisations have a responsibility here: they are called to think EU-wide, and provide their associates with locally usable directions and tools.

5.3 E&T providers

There are many strong networks of Education and Training providers in the EU: they give voice to individual organisations, who would never be able to reach the decision-making level in the EU. We mean networks like EFVET, EURASHE, EUproVET, EVTA, EVBB, not to mention those created by the EU institutions, like TTnet by CEDEFOP. On their turn, they are among stakeholders the EU refers to for policy making and very often they provide experts consulted by the Working Groups. Of course they have much power for lobbying than individual HE or HVET centres. They bring innovation into the system because and insofar they are able to gather opinions, suggestions, practices by their associates, and to convey those to the EU level. Usually their meetings are great opportunities to share and develop, and to bring into light and peer review practices tested by members. More, their publications can reach a huge number of organisations delivering education and training.

5.4 Users

As described in previous chapters, the fourth player in the quadruple helix cannot make its voice heard everywhere: in fact, youngsters, their families and citizens experience different levels of representation in different EU Member States. At a EU level, several organisations are active, some endorsed directly by the Union (eg. The European Youth Parliament, the SALTO-YOUTH network, the European Youth Forum, the European Youth Foundation, etc.), some born thanks to EU projects (ECYC-European Confederation of Youth Clubs), some representing values and orientations (European Democrat Students, DEMYC, EUPAS, etc.), some representing non-formal and informal learning (WOSM, WAGGGS, etc.).

Possible innovation pathways could include at least two elements:

1. Involving young people/students/families in decision making; that is, adding representatives of EU youth/students organisations in building policies for HVET; this could be done not only with present students, but also with former ones, e.g. the alumni organisations. In fact, former students are very likely to be nowadays workers, and it is them knowing best how their training worked, and to what extent HVET features were fundamental to a steady, satisfactory, and with sound career perspective employment.

2. Highlighting more and more the relevance of non-formal and informal learning, and the possibility to convey into HVET programmes methods and chances to bring together know-how, no matter how and when acquired. This is even more relevant in this 4.0 era, where everything is, or will shortly be, interconnected.

On a European level, innovation in HVET is usually in the hands of the EU institutions, namely the Commission, through its agencies, like the CEDEFOP and the EACEA, and their Working Groups and experts, generally involving companies and social parts, or rather their European associations and grouping. Today, thinking of innovation means thinking of sharing, networking, co-creating, opening up, accepting, validating and recognising competences however, whenever and wherever acquired. And, making all that in a globally connected world, making use of IT technologies. HVET is at the very heart of that all.
6. Summary of policies and recommendations

In this report, the partners in SHINE have shared examples of governance policies and recommendations for improvement in HVET governance. Our ideas for improvement derive from the user-oriented open innovation theories. Innovation in HVET policies usually comes top-down from the EU and the National Agencies, while practical innovation happens locally and regionally through a more dynamic process in which all the players in the quadruple helix can be involved. For example, our studies show that a local governance model including (at least) a triple helix, is very productive for presenting innovative up-to-date training offers. We will now sum-up our work by giving a few suggestions as to how the players of our four-level quadruple helix model could contribute towards managing HVET.

6.1 Users/students

Users are the fourth player of the quadruple helix and perhaps the least explored. Sweden is the only partner country in SHINE with a formally regulated quadruple helix in which users/students take active part in a local governance. In fact, the local steering committee, which formally governs a Swedish HVE programme, is not quorate without a student representative. Other partner countries work with a triple helix and involve students through evaluation and feedback.

Project SHINE believes users/students taking part as an active forth player in the governance of HVET, is an interesting possibility, which should be further investigated. This is probably best done locally, perhaps with inspiration from the Swedish example, or as suggested by the German partner, in an extended table in the local chambers. The celebrations of the 30 year’s anniversary of Erasmus, is another great opportunity to invite users on national and European levels to share their ideas on HVET.

6.2 Labour market

The stakeholders of the labour market play an important part in the governance of HVET. Without their competence need, there would be no HVET programmes. Thus, companies must be involved in steering committees/councils and executive committees on local as well as regional levels and give in-put on their future need for training. Throughout the partner countries there are many models for this, but all partners in SHINE share the opinion that the more active the companies can be in all stages of the process, the more pleased they will be with the training offer and with the employability of the students.

One challenge is that many companies need a better understanding of the benefits of employing HVET graduates. Employers need to realize that students of HVET, who can be tested and trained for the assignment in workplace learning, often are better suited for the company’s needs than university graduates. One way of facilitating the participation of local economy in HVET management is through local Business Associations and Trade Unions, who can offer information and act as an intermediary support service to SME’s.

6.3 Public administration

On a national level, governance of HVET lies in the hand of the national authorities; usually Ministries of Education and/or Ministries of Labour and their national agencies. It is they who carry through the decisions
made on the European level, working top-down. In countries with a high level of regional independence, like Germany and Italy, the national administrations play an important part in ensuring a minimum of similarity and comparability.

The financing of HVET differs throughout the partner countries; in some countries this is a matter for the national administration, in others financing is taken care of by the regional administration. Most partners in SHINE agree that the funding of HVET needs to be further examined by the decision-makers. The partner representing Ufficio Scolastico Regionale per il Veneto, describes the system as having too limited financial resources and hopes that it will soon overcome the experimental stage and definitely implement a sustainable model. Project SHINE believes that decision-makers ensuring a reliable long-term funding for HVET is essential to the quality of the training and would allow for a well-established and on-going relationship in the quadruple helix.

In several partner countries, like Germany, Rumania and Croatia, the national authorities are supported by (local or regional) chambers with responsibility for the dialogue with companies and the social players of the labour market. The chambers (or their equivalent) are also responsible for aligning the smart specialization and development of the region with the education portfolio and for providing a short and medium term forecast for the local labour market. Project SHINE would like to recommend the chambers as an interesting forum for dialogue in HVET. In several partner countries the closest relationship between the companies, training partners and students is within the chambers’ organizations, which makes them very useful for a bottom-up approach to governance.

The SHINE peer review (intellectual output 2) highlighted the widespread need to increase the local/regional public administration’s commitment in developing dedicated and systematic promotional initiatives towards local companies and high schools. Raising the status and the awareness of HVET programmes on EQF5 as an alternative to university studies is a long-term commitment that needs to be taken on by public authorities on all levels. This can be achieved both through local career counselling and national information campaigns. The impressive level of employability with a very high number of HVET students going straight to work, needs to be widely communicated to students on EQF4 and to adults with the need for career development.

6.4 Education providers

In many partner countries HVET providers act as local or regional “hubs” or “competence brokers” for the companies in their network. The education providers administer funding, define common need for training in the companies and contribute to innovation, as an alternative to expensive R&D departments, for the local SME’s. This is one successful way of strengthening relationships within the triple helix.

It is also a good platform to address some of the biggest challenges to HVET providers, as defined by SHINE the peer review:

- Raising the status of HVET programmes on EQF5 and making them more well known to students and companies
- HVET ensuring the delivery of the right competences at the right time
- HVET contributing to innovation in local and regional SME:s
The above points will be the focus of local action plans for several partners in SHINE and will be further explored in intellectual output 5.

Education providers can indeed play a very important part in their local network. On a national level it is more difficult for a single organization to be active in the governance of HVET. The EU-level is perhaps more accessible for E&T’s who want to take an active part in improving and developing European HVET through EU-projects. Spreading the output of EU-projects and continuously informing the Directorate-General of their findings are important channels of influence for European education providers.

### 6.5 General recommendations

As suggested in the introduction, the examples from SHINE’s partners show that it is the relationship and the interaction between the stakeholders which make HVET so successful. The players of the quadruple helix need to work in a close relationship with continuous communication, not only on the same level, but between levels, as shown in the model below.

![Communication for innovation on four levels of HVET governance](image)

As HVET policies and legislation come top-down from the EU and the National Agencies, while practical innovation happens locally and regionally, project SHINE concludes that to allow for progress on local and regional levels, there must be an ongoing dialogue with the national and European levels. Public administration on EU and national levels needs to have a broad understanding of the needs of regional or local companies and E&T’s, in order to develop regulations and funding that will facilitate their work. Companies and education providers need to be able to clearly communicate to national and European decision-makers which new policies would help them bring competence and innovation to local economy. The model could be summed up in the following recommendations for innovative governance of HVET:

- Involve all players, including students, in the quadruple helix
- Keep a close relationship between the players – this will bring possibilities for innovation
- Communicate not only on the same level of governance, but between levels – top-down and bottom-up
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