

SHINE – Share, improve, develop: today's excellence for tomorrow's HVET  
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# Output 1 - National Surveys

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Sapere utile



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University of Applied Sciences







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# Content










## Output 1 – National Surveys

-  Aim of the surveys
-  Framework
-  2 German Best Practices in Detail
-  Summary of European Surveys



# Aim of the surveys




-  SHINE brings together diverse expertise in the field of Higher Vocational Education and Training
-  All partners had to carry out surveys and consider 2 best practices in their local/national context
  -  Italy
  -  Germany
  -  Romania
  -  Croatia
  -  Sweden



# Aim of the surveys





## Providing and Sharing

-  examples, methodologies and outcomes of co-operation among HVET training institutions, business and economic players



# Framework



-  was developed by Ufficio Scolastico Regionale per il Veneto  
in cooperation with the project partners
-  finalized in November 2015



# Framework



## 5 Main Parts:

1. **Summary** (shortly describing both best practices identified) in English and in national language
2. **Description of national and regional context**, economic and social features and how they relate to, or influence, the selected best practices



## 3. Description of National Education System



Graphic scheme describing:

- structure of the system, with reference to EQF levels, indication of combination ways
- indication of where best practices are located in the framework



Definition of HVET



# Framework



## 4. Methodology for identification and selection of best practices



Outcomes



Success Factors





# Framework



## 5. Description of each practice identified



Sector



Players involved



Development process:

- Date of the program's foundation
- Governance of the partnership
- Design of the learning pathway



## 5. Description of each practice identified



### Indicators:

- Outcomes and Success Factors
- Funding system
- Contribution in supporting innovation



### Training program structure

- qualification(s)
- basic or advanced education/training
- program duration



# Framework



## 5. Description of each practice identified



Training/learning methods



Management of training



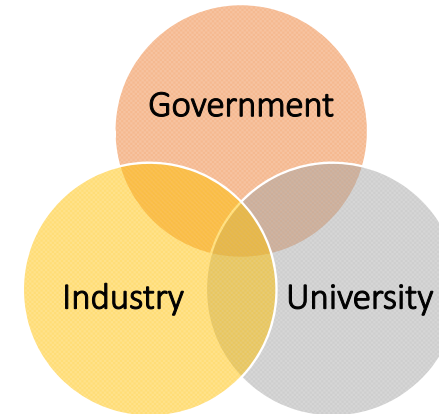
Management of relationships with triple helix stakeholders (involvement of stakeholders, distribution of involvement, planned/future inclusions)



Problems encountered (possible origin of these problems)



Solutions found/ possible future solutions









# Framework



## 5. Description of each practice identified

-  Impact (e.g. accordance to the overall goals of the European Commission, innovation generated, development of the size of target group, short term/long term effects on the education system/students/enterprises, etc.)
-  Expectations about possible future developments
-  Employment rates
-  etc.



Any questions in between?



## 2 Best Practices:

### Three track course of study

- Integrated vocational qualification
- Integrated master craftsman diploma
- Diplom (FH)

### Extra-Occupational Study Program

- Diplom (FH)



# German Best Practices



## Overall Reasons for the Consideration of Best Practices



Degree of innovation for students

- new ways to combine qualifications, shorter time to achieve a qualification



Flexible learning and entrance possibilities



Studies are linked between University and Industry





Serves the needs of the job market for more highly trained people



# German Best Practices



## Best Practice 1: Three track course of study

-  Type of best practice: three track course of study Electrical Engineering
-  students can achieve three degrees within 10 semesters (5 years)

Degrees	Duration	GQF/EQF level
Diplom (FH)	after 5 years	level 6
Integrated vocational qualification certified by the local Chamber of Trade	after 2,5 years	level 4
Integrated master craftsman diploma certified by the local Chamber of Trade	after 4 years	level 6





# German Best Practices



## Best Practice 1: Three track course of study

 Players involved:

 the University of Applied Sciences Zwickau



  
**Westsächsische Hochschule Zwickau**  
University of Applied Sciences

 Chamber of Trade (in German: Handwerkskammer)



 a local company for the practical work experiences



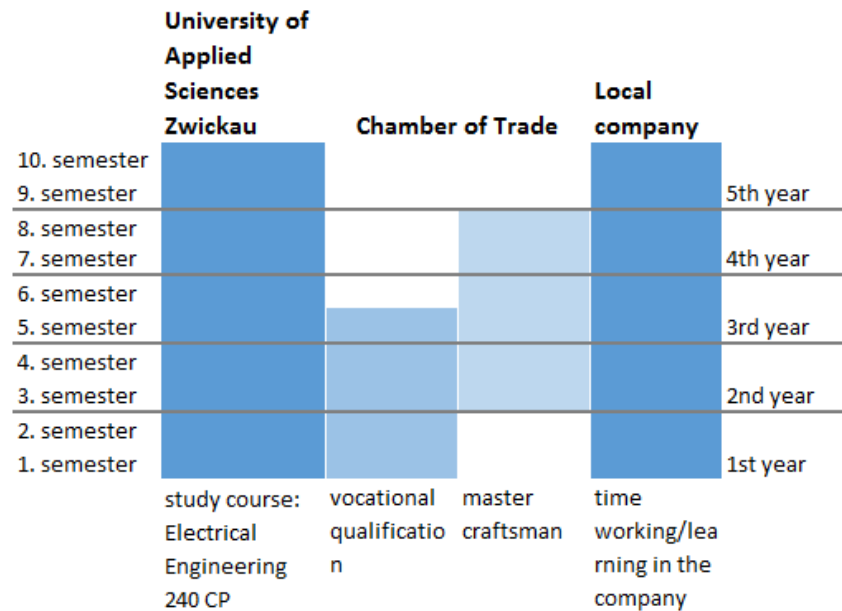
# German Best Practices



## Best Practice 1: Three track course of study



Learning pathway:



1. – 6. semester: reduced workload

7. semester: internships

8. – 10. semester: regular full-time study







# German Best Practices



## Best Practice 1: Three track course of study

Management of relationships with triple helix stakeholders:

-  collaborative study program of 2 institutes + local companies
-  Students improve their network, their professional interaction
-  Students get to know the newest developments
-  For companies it offers a chance to build and preserve experts for a long term



## Best Practice 1: Three track course of study



Approaches to cover specific demands of industry/businesses:

- high demand for more vocational education and master craftsmen qualifications (more and more students decide for an academic education only)
- In comparison: in 1993, 208.000 young people chose a vocational education, in 2013 there were only 139.000 left
- the concept helps to solve the current skills shortage, especially in the field of crafts



## Best Practice 1: Three track course of study



Possible future development:

extend the study programs to other fields

- Electrical Engineering
- Supply and Environmental Engineering
  - to provide a higher variety for students
  - to serve industry needs



Any questions in between?



# German Best Practices



## Best Practice 2: Extra-occupational study course

 Type of best practice: extra-occupational study course of Business Informatics

 A collaborative study program of

 the University of Applied Sciences Zwickau



 the media project Institut für IT- und Managementtechnologien gGmbH in Dresden





# German Best Practices



## Best Practice 2: Extra-occupational study course

- 📖 Learning pathway: students can achieve a Diplom (FH) degree within 7 semesters (3,5 years) parallel to a full-time job

Degree	Duration	GQF/EQF level
Diplom (FH)	after 3,5 years	level 6

- 📖 addresses **graduates of vocational trainings** in the field of Information Technology who want to reach a higher qualification level
- 📖 the vocational education and practical experiences can profoundly be accredited
- 📖 allows a recognition of 72 ECTS (3 semesters)





# German Best Practices



## Best Practice 2: Extra-occupational study course

 Learning pathway:

Wirtschaftsinformatik *							
	4	5	6	7	8	9	10
Anrechnung Semester 1-3	Mathematik	Mathematik	Mathematik	Programmierung	Einführung VWL	Coaching Informat.Syst.	Medienkompetenz
	Programmierung	Programmierung	Programmierung	Prozessorient. Informat.Syst.	Betriebliche Prozesse A	Modellierung Simulation	Führungskompetenzen
	Logik	Datenbanken	Datenbanken	Produktorient. Informat.Syst.	Betriebliche Prozesse B	Angewandte AR und VR	Diplomarbeit
	Algorithmen	Mobile Systeme	Netze & Sicherheit	Projektmanagement	Rechnungswesen	E-Business	
	Informationstheorie	Software Engineering	Wissensmanagement		Coaching Informat.Syst.		
	Informationssysteme	Informations Management	Datenanalyse				
	ECTS 72	ECTS 24	ECTS 24	ECTS 24	ECTS 24	ECTS 24	ECTS 24

Semester 1 - 3:  
72 ECTS







Semester 4 - 10:  
24 ECTS each



# German Best Practices



## Best Practice 2: Extra-occupational study course





-  Degree of innovation for students
  -  Possibility of access without A-levels/ diploma from German secondary schools (Qualification for university admission)
  -  International certification possible: Points via the European Credit Transfer and Accumulation System (ECTS)
  -  Diploma Supplement in German and English (students who graduate)
-  Contribution in supporting innovation
  -  Unclassical concept, accreditation management and connection of vocational and academic education



# German Best Practices



## Best Practice 2: Three track course of study




-  Approaches to cover specific demands of industry/businesses
  -  Helps to solve the current skills shortage (esp. in the field of IT)
  -  Ties good professionals for a long time (chance for companies)
  -  Use of current know-how from University of Applied Sciences



# German Best Practices



## Best Practice 2: Three track course of study

-  Management of relationships with triple helix stakeholders (training/innovation, business, institutions)
  -  Chance for students to improve their network and professional interaction and get to know the newest developments
  -  Built and preserve experts for a long term

→ Due to possibility to study parallel to a full-time job and collaborative study program of 2 organizations



# German Best Practices



## Best Practice 2: Three track course of study



Possible future development/ Solutions



Intensification of collaboration between the media project institute and the University of Applied Sciences for possible future programs and new ideas



Internationalization of the program



Extension into other study



Any questions in between?



# European Surveys



## A Summary of the European Best Practices

 Sweden

 Croatia

 Romania

 Italy




# Sweden



 Survey by: Göteborgs Tekniska College AB

 Best Practices:

 T4 at the Curt Nicolin School in Finspång

 HVE at Gothenburg Technical College










# Sweden



## Reasons for Best Practice:

-  represent best practices in terms of innovation and employability
-  have an interesting ownership structure with collaboration between local government – industry – school
-  innovative answer to
  -  the need for more qualified workers in production industry  
(tailored for a dynamic market situation, i.e. that **only programs and competences requested by the employers are allowed government grants**)
  -  quickly make the students employable



# Sweden



## Reasons for Best Practice:



Entry based on real skills: National Agency for HVE allows 20% of a class to access a program based on real skills

(e.g. students who have work experience but lack a diploma on EQF 4)



# Sweden



## Best Practice 1:

### T4 at the Curt Nicolin School in Finspång



follows a national curriculum established by the National Agency for Education



EQF level 5 qualification

= it can be seen as a preparation for academic studies in technology on EQF levels 6 – 8



# Sweden



## Best Practice 1:

### T4 at the Curt Nicolin School in Finspång



**Entry requirement:** diploma on EQF 4 from the technical program

→ students can go straight to the more advanced courses on EQF 5 and focus on new working experience



### Players involved:



the local education counsel: ensures that the education is relevant and the students employable



The National Agency for Education: decides the curriculum, allows government grants, performs quality control and inspections



## Best Practice 2: HVE at Gothenburg Technical College



### Players involved:



the steering committee, which has to include members of the industry



a representative of a higher educational institution (Chalmers University of Technology, EQF 6-8)



a representative of the City of Gothenburg



student representatives




→ the triple helix is a regulated part of every HVE education in Sweden



# Sweden



## General Critical Factors:

-  3 years of the Swedish Upper Secondary School are financed by the municipality
-  education providers who wish to offer a 4<sup>th</sup> year apply for government grants from the National Agency for Education
-  The grant is allowed for two (HVE) or four (T4) years (i.e. starts of the program) and then has to be reapplied for
  - the continuity of HVE programs and the T4 programs are uncertain
  - difficult for providers to invest in expensive equipment, teachers etc.



# Croatia



 Survey by Obrtničko Učilište /Craft College

 Best Practices:

 Master craftsman qualification





 Short professional study degree



# Croatia



## Reasons for Best Practices:

-  **Master exam:** oriented directly to labor market, excellent recognition of knowledge (formal, non-formal and informal)
-  **Short professional study degree:** solves the big problem of Croatian foundry
  -  The lack of qualified personnel and
  -  The insufficient implementation of modern technologies










# Croatia



## Best Practice 1:

### Master exam:

-  a unique system which allows progression from EQF level 3 and 4 to level 5
-  excellent recognition of formal, non-formal and informal acquired knowledge
-  regulated by the Ministry of Entrepreneurship and Crafts
-  approved by the Croatian Chamber of Trades and Crafts
-  oriented directly to labor market









# Croatia



## Best Practice 1:

### Master exam:

-  Croatian Qualifications Framework (CroQF) level 5, same level in the European Qualifications Framework (EQF)
-  Example of a gas installer Master Craftsman Exam consists of 4 parts:
  -  a practical part
  -  a professional theoretical part necessary for crafts businesses
  -  a business-management and legislative part
  -  a pedagogical part related to the education of apprentices



# Croatia



## Best Practice 2:


### Short professional study degree for Smelter (University of Zagreb, Faculty of Metallurgy)

#### Entry requirements:

 candidates who completed a four-year or three-year VET school and

 had subjects Chemistry and Mathematics

 3 year program, 150 ECTS points, EQF level 5

 a shorter period of time compared to the undergraduate and graduate Metallurgy studies → allows immediate employment process






# Croatia



## Best Practice 2:

### Short professional study degree for Smelter

-  students gain more detailed knowledge and skills in conventional and modern technologies of production metal cast than on EQF level 4 or 6
-  other non-relevant fields of metallurgy (eg. plastic processing) are not included in curriculum
-  it is possible to continue with professional study for baccalaureus or achieve extra credits for continuation on university study programs




# Romania



 Survey by Technical College "Ion IC Bratianu"

 Best Practices:

 "HENRI COANDA" Post-High-school Timisoara

 The Economical High-school "Francesco Saverio Nitti" Timisoara





# Romania



## Reasons for Best Practices:

### “HENRI COANDA” Post-High-school Timisoara:

-  prepares general medical practitioners through a syllabus of 3 years
-  based on the society’s needs (promote a positive sense of health is part of the regional strategy)

### The Economical High-school “Francesco Saverio Nitti” Timisoara:

-  prepares specialists in trade, banking account and administration through a syllabus of 2 years



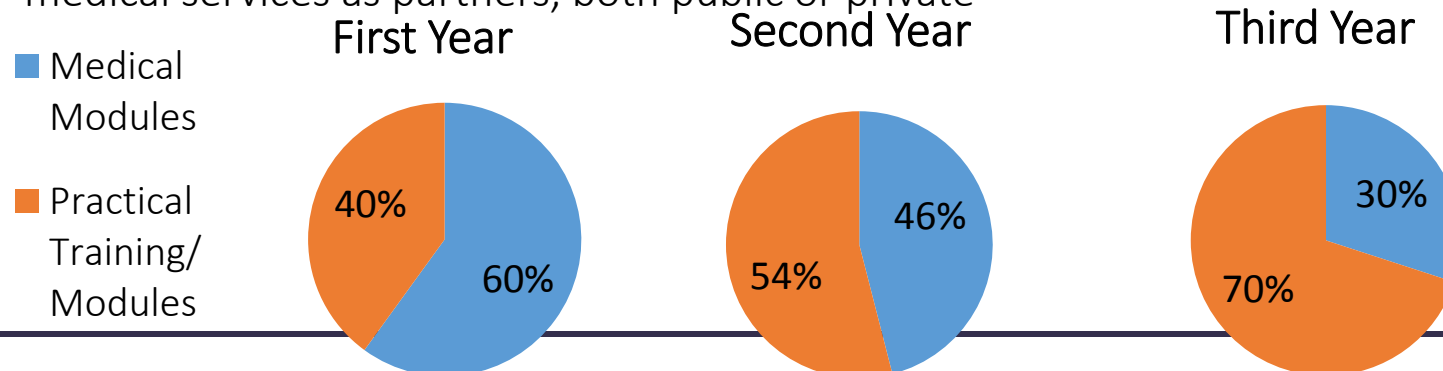
## Best Practice 1:

### “HENRI COANDA” Post-High-school Timisoara



The projected curricula is structured on modules of

- theoretical preparation in the specialty field
- practical preparation or clinical probation, accomplished by suppliers agents who provide medical services as partners, both public or private





## Best Practice 2:

### The Economical High-school “Francesco Saverio Nitti” Timisoara

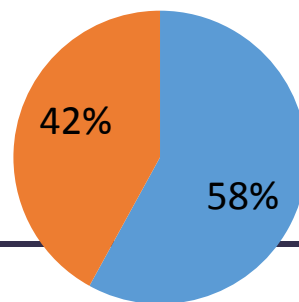


The projected curricula is structured on modules of

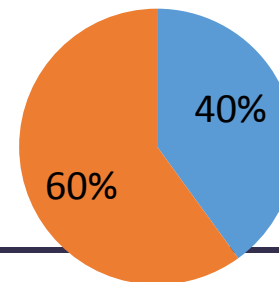
- theoretical preparation in the specialty field
- practical preparation, accomplished by suppliers agents/firms, both public or private

- Economical Modules
- Practical Training

First Year



Second Year











# Italy






-  Survey by Istituto Formazione Operatori Aziendali
-  Best Practices:
  -  ITS Maker – Higher Technical Institute for Mechanics-Mechatronics-Vehicle motors-Packaging
  -  ITS for New Technologies for Made in Italy – Mechanic – Mechatronics System (Energy) Puglia “A. Cuccovillo”



# Italy



## Best Practices:

-  2 Higher Technical Institutes (ITS)
-  tertiary, non-academic pathways, leading to EQF 5 Qualifications
-  Sector: mechanics/mechatronics









# Italy



## Reasons for Best Practices:

### ITS Maker – Higher Technical Institute for Mechanics-Mechatronics-Vehicle motors-Packaging

-  capability to be part of a precise policy for regional development in a triple helix setting
-  the number, variety and quality of players involved in the Foundation: almost 70 organizations
-  ability in involving businesses in all phases of training development
-  Very positive impact in terms of training success and employability
  -  drop-out rate basically zero
  -  percentages of employment after 6 and 12 months practically at 100%






# Italy



## Reasons for Best Practices:




### ITS for New Technologies for Made in Italy – Mechanic – Mechatronics System (Energy) Puglia “A. Cuccovillo”

-  capability to stand out in a region of southern Italy, traditionally considered “less able to innovate” compared to northern regions
-  capability to network with local, national and international companies, as well as with other ITS and with the European Union
-  performance at national level: in a ranking drafted by the Italian Agency of Ministry of Education in 2015, the Foundation scored 2nd out of 63, and definitely 1st in its sector



## Best Practice 1:

### ITS Maker – Higher Technical Institute for Mechanics-Mechatronics- Vehicle motors- Packaging

-  Participation is totally free of charge for students
-  have own feedback system: measures satisfaction of students and of companies (rate is over 85% both)
-  Currently setting up a set of questionnaires for getting companies' feedback 1 and 2 years after employment of graduates





# Italy



## Best Practice 1:

ITS Maker – Higher Technical Institute for Mechanics-Mechatronics- Vehicle motors-Packaging

### Learning pathway:



-  Designed together with companies from its very beginning
-  Steering Committee, representing all stakeholders, stands as a permanent table, meets on a yearly basis to officially review the curricula
-  A second, permanent table focusses on long-term perspectives (e.g. innovative technical competences, product and process innovation) aiming at better understanding labor market trends



## Best Practice 1:

### ITS Maker – Higher Technical Institute for Mechanics-Mechatronics- Vehicle motors- Packaging

#### Training program structure:

-  Five programs with EQF level 5 qualifications, each with a duration of 2 years: e.g.
  - Higher technician for automation and packaging (Bologna)
  - Higher technician for mechatronic systems (Reggio Emilia)
-  All programs train soft, cross and technical skills










# Italy



## Best Practice 1:

ITS Maker – Higher Technical Institute for Mechanics-Mechatronics- Vehicle motors- Packaging

### Training Methods:

-  frontal lessons
-  in-company lessons
-  workshops
-  team working
-  internships and work-based learning
-  company visits and visits to exhibitions
-  etc.







# Italy



## Best Practice 2:

ITS for New Technologies for Made in Italy – Mechanic – Mechatronics System  
(Energy) Puglia “A. Cuccovillo”

### Learning Pathway

-  designed together with companies from its very beginning
-  The Steering Committee, representing all stakeholders, stands as a permanent table, meets on a yearly basis to officially review the curricula





# Italy



## Best Practice 2:

### ITS for New Technologies for Made in Italy – Mechanic – Mechatronics System (Energy) Puglia “A. Cuccovillo”

#### Training program structure

-  2 programs, with EQF level 5 qualifications, each with a duration of 2 years:
  - Higher technician for integrated automation and mechatronic systems
  - Higher technician for innovation of mechanical processes and products
-  All programs train soft and cross skills (e.g. English language, communication, project management, team working, problem solving, negotiation techniques)










# Italy



## Best Practice 2:

ITS for New Technologies for Made in Italy – Mechanic – Mechatronics System (Energy) Puglia “A. Cuccovillo”

### Training methods:

-  frontal lessons
-  in-company lessons
-  workshops
-  team working
-  internships and work-based learning
-  company visits and visits to exhibitions
-  etc.



Any questions?

Thank you!

