

**UASiMAP**

# Regional Engagement of Universities of Applied Sciences

*National Report Hungary - 2020*



## ■ Authors

- Dr. Balázs Heidrich, Rector of Budapest Business School, President of the Hungarian Rectors' Conference's Committee for the Practice-oriented Higher Education Programs
- Krisztina Sitku, University of Dunaújváros, PhD Candidate
- Petra Perényi, Hungarian Rectors' Conference, European and International Secretary, UASiMAP Project Manager
- Fanni Perjés, Hungarian Rectors' Conference, International Officer, UASiMAP International Officer

## ■ Country

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## ■ Organisation

Hungarian Rectors' Conference

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# List of Hungarian UAS institutions\*

## UAS institutions maintained by the State:

- Budapest Business School (Budapest, Zalaegerszeg)
- University of Dunaújváros (Dunaújváros)
- Eszterházy Károly University (Eger, Jászberény, Sárospatak)
- University of Nyíregyháza (Nyíregyháza)

## Private/Church maintained UAS institutions:

- Budapest Metropolitan University (Budapest, Hódmezővásárhely)
- Edutus University (Budapest, Tatabánya)
- Gál Ferenc University (Szeged, Gyula, Békéscsaba, Szarvas)
- Kodolányi János University (Orosháza, Székesfehérvár, Budapest)
- Milton Friedman University (Budapest)
- John von Neumann University (Kecskemét)



\* as of 2020

# Introduction

The regional engagement of higher education institutions has been an important theme that has been researched extensively with the results published in a wide range of literature. Some authors emphasize the need for a more prominent role for professional higher education (PHE) in the development of regions (e.g. Foray et al., 2012; Hazelkorn & Edwards, 2019), and also advocate the involvement of the UAS in the development of the regional strategies (Foray et al., 2012, etc.).

This report presents one of the key outputs from the ERASMUS+ project Mapping Regional Engagement Activities of European Universities of Applied Sciences (UASiMAP). The report presents the situation of Universities of Applied Sciences (UAS) and their regional engagement in Hungary. The purpose of this report is to present important analytical data and explain the present situation, evolution, and trends of development of the Professional Higher Education sector with a focus on the UAS. The report provides a qualitative overview of the variety of UAS regional engagement in the country and also presents several examples of good practice in this important area of activity at a local level. The report also presents the perspectives of internal and external stakeholders' groups regarding the different activities and forms of regional engagement; institutions' contribution to society and the regional community and explores currently underutilised capacities and possible further development of regional engagement. Discussion with stakeholders has also addressed the benefits of regional engagement indicators, appropriate approaches to the measurement of these, and how such indicators could inform self-evaluation.

The collection of national reports, prepared by the project partners, demonstrates the variety of the European Professional Higher Education sector and also provided the background for partner's discussion on the main aims of the project, which are to develop a self-reflection tool that will measure regional engagement of universities of applied sciences (UAS) and support the development of their further strategies.

# 1. National context of the Universities of Applied Sciences in Hungary

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## 1.1 Definition of UAS in Hungary

In Hungary, **Universities of applied sciences (UAS)** are tertiary education institutions, that are providing at least four Bachelor programmes and two Masters programmes, as well as at least two dual trainings where the UAS institutional accreditation covers engineering, IT, agriculture, the natural sciences or business studies. At least 45% of their teaching and research staff – who are employed directly or on a public service employment basis – should have a doctoral degree. They operate academic student workshops, and are offering foreign language courses at some of the departments<sup>1</sup>.

**Colleges** are tertiary institutions where at least one third of the teaching and research staff – who are employed directly or on a public service employment basis – have a doctoral degree. Colleges are entitled to operate academic student workshops. Between 2015 and 2020, nearly all Hungarian colleges have been transformed into universities of applied sciences. The new institutions typically refer to themselves as universities.<sup>2</sup>

For UAS institutions, like all other higher education institutions, fulfilling their third mission has become an important factor to obtain more funding from external sources (typically EU funding). UASs are on a long journey to deliver activities which are part of the sector's third mission, such as social responsibility, the popularisation of science, and the dissemination of knowledge. There have been a few good examples since the development of this field began, but HEI's prevalence in this mission is yet to reach a desirable level. The development of Hungarian higher education institutions in this area is unavoidable and necessary, since the challenges presented by the global competitive situation, the evolving social needs and the necessity of life-long learning all show that in the future, fulfilling these needs will be essential.

## 1.2 Background/history of UAS in Hungary

The Universities of Applied Sciences (UAS) were established by the law on higher education in 2015. Since then, colleges with a larger student enrolment and a more structured organization have been transformed into the UAS. The implementation of the new type of higher education institution was driven by a top-down approach. The idea was that UAS institutions form an innovative bridge between science and the industry, thus enabling marketable ideas to be put into practice. Students of UAS institutions are expected to acquire their practical knowledge in parallel during their studies, preferably in the workplace where they will later work.

There is no distinction between universities and UASs in this respect, however, universities of applied sciences (and colleges) are for historical reasons more focused on practice-oriented training: first-cycle, short-term programmes and applied researches are dominant. There is also no further distinction made between professional bachelor's programmes (which are organised by universities of applied sciences) and academic bachelor's programmes (which are organised by universities).

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<sup>1</sup> [https://eacea.ec.europa.eu/national-policies/eurydice/content/higher-education-35\\_en?fbclid=IwAR1uX4E-4W0K9BByu0EII7WFhW9RtFfbqe\\_-bJFx2N-icGnnl63CRnlod8w](https://eacea.ec.europa.eu/national-policies/eurydice/content/higher-education-35_en?fbclid=IwAR1uX4E-4W0K9BByu0EII7WFhW9RtFfbqe_-bJFx2N-icGnnl63CRnlod8w)

<sup>2</sup> Based on the Shifting of Gears in Higher Education: Mid-Term Strategy Policy 2016.

Strengthening the impact of higher education on local economic development is an important goal of the Hungarian higher educational strategy, the *Shifting of Gears in Higher Education*<sup>3</sup>. Universities of Applied Sciences are intended to realize a more intensive cooperation between the industry and the higher educational sector.

### 1.3 Description of the UAS sector and programme

The Hungarian HE legislation identifies the following UAS institutions<sup>4</sup>:

**UAS institutions maintained by the State:**

- Budapest Business School
- University of Dunaújváros
- Eszterházy Károly University
- University of Nyíregyháza

**Private UAS institutions:**

- Budapest Metropolitan University
- Edutus University
- Gál Ferenc University<sup>5</sup>
- Kodolányi János University
- Milton Friedman University
- John von Neumann University

Based on the Hungarian Education Authority's official records<sup>6</sup>, the number of UAS students for the academic year 2018/2019 and 2019/2020 comprises of the nine already existing UAS institutions' student enrolment numbers. These 9 institutions are recognised as universities of applied sciences based on the Hungarian legislation. Since the tenth institution joined the group of the UAS institutions from the 1st of September 2020, their data has not been included in the statistics for the previous academic years.

Table 1 Number of students					
	2018 <sup>7</sup>	2019 <sup>8</sup>		2018	2019
Number of HEIs students	283 350	285 110	Number of UAS students (expert estimation)	42 012	43 101

\* The UAS student number comprises students enrolled in practice-oriented higher education programmes offered by the UAS, as defined by Hungarian law (9 HEIs).

<sup>3</sup> The original English language version of the strategy has been made unavailable on the official Hungarian government website. The Hungarian version is available here: [https://2015-2019.kormany.hu/download/c/9c/e0000/Fokozatvaltas\\_Felsooktatasban\\_HONLAPRA.PDF#!DocumentBrowse](https://2015-2019.kormany.hu/download/c/9c/e0000/Fokozatvaltas_Felsooktatasban_HONLAPRA.PDF#!DocumentBrowse)

<sup>4</sup> As of 2020

<sup>5</sup> Gál Ferenc University as a former college has been transformed to UAS on the 1st of August 2020, so we included it into the list of UAS institutions, but we have no records yet related to the institution, tables -as of the 2019/2020 academic year- do not contain relevant data on this new UAS.

<sup>6</sup> The official records of the Hungarian Education Authority were made available for the Hungarian Rectors' Conference, there are no online records of the numbers.

Table 2 Shares of students in 2019 at different types of HEIs	University	UAS	Other HEIs
	65.3%	15.1%	19.6 %

The total number of UAS students in the academic year 2019/2020 was 43 101, comprising the overall number of Hungarian and foreign students enrolled in the 9 UAS institutions. The total percentage of students studying in UAS institutions was 15.12% of the overall student population in 2019. Out of these, the reported number of students studying at UAS defined by law was 43 101, based on the data from the Hungarian Education Authority.

Table 3 Shares of UAS students at different legal forms	Private institutions	Public institutions	Other (specify)
	32.05 %	67.95 %	-

Table 3 is based on the available data of the 9 UAS institutions from the academic year of 2019/2020.

- Number of students in private UAS institutions: 13 815
- Number of students in public UAS institutions: 29 286
- Total number of students in UAS institutions: 43 101

#### Table 4 List of most dominant sectors

Field	Shares of the UAS students in the given dominant sector out of all UAS students
1. Economics	52.14%
2. Engineering	5.51 %
3. Teacher Training	13.82%
4. IT	9.40%

Based on the official records of the Education Authority, the most dominant fields in the higher education sector are Economics, Engineering, and Teacher training. The share of UAS students in the three most dominant higher educational sectors adds up to approximately 75% of all UAS students. Out of these, 22 473 students are in Economic Sciences, 5 959 students in Teacher training and 4 052 students in the Information Technology field. Although Engineering is the third most dominant field in the overall higher education sector, the share of students in the IT courses provided by UAS institutions is higher than in Engineering (2 374 students study Engineering in UAS, equaling to 9,4 % out of all UAS students).

## 1.4. Funding mechanisms

UAS institutions maintained by the state receive funding from the state budget, while private institutions only receive a certain amount of support related to certain courses. Regarding the method of funding UAS institutions are financed in the same way as other higher educational institutions are: the budget is allocated on a normative formula, for which the number of students and PhD holding staff (i.e. teachers and researchers) is taken into account, and an additional lump sum for general costs (such as the maintenance costs for buildings) are provided. However, due to the ongoing transformation in the higher educational sector, one of the UASs, the John von Neumann University is already in the process of transforming its organizational structure to a state foundation-based funding system<sup>9</sup>, and other UASs will follow later on. This organizational transformation will strongly affect the financing mechanism of the institutions with new maintainer structure, the new financing method is currently under development. As far as external or other type of funding is concerned, there are no regionally allocated funds for UAS institutions, they can obtain more funding via project grants.

## 1.5 Challenges of the UAS sector

- The distinction of UAS institutions from other higher education institutions should be more clarified apart from the difference in their names. The original governmental idea defining the role of UAS institutions has not yet been further developed and improved since their establishment. Although the institutions have been established by law, currently, no other specific interventions have been made to develop the profile of UAS institutions.
- There is a lack of access to funding from regions. The Hungarian regions have no real budgets, only local municipalities. They collaborate with the local HEIs through projects, but not on a systematic budget based level.
- UAS institutions' have lower prestige compared to other universities, therefore there are challenges in expressing that UAS shouldn't be associated with poor quality, but with high quality professional higher education trainings.
- In general, all Hungarian higher education institutions, including UAS institutions have to face a declining number of students.

## 1.6 Quality Assurance of UAS and regional engagement

The Higher Education Act, in effect, does not contain specific requirements for quality improvement. However, the Government Decree on Quality Assessment and Improvement in Higher Education stipulates that it is primarily the task and responsibility of higher education institutions to ensure the quality of teaching, research and artistic activities. The Hungarian Accreditation Committee plays an important role in quality assurance. Its main task is to accredit institutions and their programmes, but, on request of any higher education institution, it may also evaluate their quality assurance programmes. In addition, the minister responsible for education may ask the Committee to evaluate higher education institutions and prepare a report about them for development purposes. In 2013, a government decree was adopted to recognise the best institutions and faculties as “priority” or “research” university/faculty or as a college of “applied sciences”. It also specifies the recognition and support of academic excellence (of students, academic staff and researchers).<sup>10</sup>

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<sup>9</sup> in 2020

<sup>10</sup> Quoted from EURYDICE

[https://eacea.ec.europa.eu/national-policies/eurydice/content/quality-assurance-29\\_en](https://eacea.ec.europa.eu/national-policies/eurydice/content/quality-assurance-29_en)

In practice, UAS institutions apply stricter quality assurance system than they would be advised by the higher education act or the regular accreditation processes made by the Hungarian Accreditation Committee: they apply the ISO system, since the large, significant companies they cooperate with require them to use the ISO system. The quality assurance systems – the ISO system too – determine requirements against the institutional processes, and the outcomes of the institutions' operation, they do not refer to the regional engagement of the institutions, however strict they are.

## 2. Types of regional engagement of UAS

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### 2.1 Active role in regional strategy development and implementation

#### 2.1.1 Forms of engagement of UAS in the development of regional strategies

The Hungarian UAS institutions are not typically engaged in the development of regional strategies, neither are the colleges. There is no formal strategy related to UAS sector. „Shifting of Gears in Higher Education (2016)”<sup>11</sup>, the governmental strategy regarding higher education does not refer to specific strategic goal for UAS institutions, it only refers to the different types of institutions' different functions.

Although Hungarian UAS institutions aim to be more deeply engaged in regional development, in general, they do not typically contribute to regional strategies. Instead UAS institutions are more likely to be active in promoting public discussion on regional development and be involved in the processes as national and regional programmes necessitate it. Cooperation in regional development strategies is based on requests from local and/or regional authorities, and the contribution depends on each institution's individual configuration of actual strategical aims, needs, resources and other aspects, as well as their local-regional embeddedness, which may change over time.

For example the University of Dunaújváros (UoD) has partnerships with regional authorities and stakeholders, such as the Municipality of Dunaújváros – the municipality for Fejér County, a range of local and national companies, civic organizations, and even its' Consistory includes representatives of such important regional company representatives (the CEO of *Paksi Atomerőmű Zrt.* (Paks), or the chair and CEO of *DVG Zrt.* (Dunaújváros)).

According to the Internal Stakeholder Focus Group<sup>12</sup> one of the biggest challenges is to establish a discussion and communication that is formal, recurring, and involves all parties, and allows continuous information sharing. The establishment of a network that involves all the key regional parties would be beneficial for everyone. Companies find it challenging to figure out how to cooperate with the UAS, identifying a partner for a certain task or project. Identifying the target systems would be beneficial, since private sector operates with significantly shorter target systems and plans than the bureaucratic system of a higher education institution. Identi-

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<sup>11</sup> The original English language version has been made unavailable on the official Hungarian government website. The Hungarian version is available here: [https://2015-2019.kormany.hu/download/c/9c/e0000/Fokozatvaltas\\_Felsooktatasban\\_HONLAPRA.PDF#!DocumentBrowse](https://2015-2019.kormany.hu/download/c/9c/e0000/Fokozatvaltas_Felsooktatasban_HONLAPRA.PDF#!DocumentBrowse)

<sup>12</sup> Members of the Internal Stakeholder Focus Group were representatives of UASs management and faculty members (teachers), statements mentioned in this paragraph are based on the Internal Stakeholder Focus Group meeting outcomes and the feedback of the representatives.

fying the common ground could solve this issue. Therefore, UAS institutions should improve their communication towards regional stakeholders to reach common ground mutually valuable solutions.

The External Stakeholder Focus Group identified as challenges in regional engagement the need for UAS's to constantly adjust themselves to the shifts in the regional market. Regional engagements, once established, would rather serve long-term cooperation. Examples for long-term cooperation exist in UASs, that were previously colleges. These institutions can still rely and build on their relationship with the business sector, like in case of Dunaújváros, where courses and research projects were established to accommodate the rubber tire factories and the atomic plant. Other strong cooperation – with supermarket companies such as Tesco, Spar and Metro, providing experiences in the field of logistics – are in the area of the capital.

The need for long-term regional engagements with UASs exists, but the situation is contradictory. Although the region requires a constant supply of experts, researchers and personnel to maintain factories in the region (which provide a stable income for the region and job opportunities), it is challenging to attract students to these career paths.

The external experts<sup>13</sup> identified the following benefits of regional engagement: Regional stakeholders benefit from the cooperation with regional UAS institutions through fresh UAS graduates who have tailored skills to meet the needs of the stakeholders. Those students, who complete their internships in regional companies are highly likely to stay in the same company after graduation, since employers are likely to offer them full-time positions, if they perform well. External experts also agreed that the majority on UAS cooperation are based on personal connections, collaboration in research projects are based on individual contracts. Collaborations are valuable to the UAS because they create value, attract support from the companies, and also creates income for the UAS.

Any type of regional cooperation – whether employment, research collaboration or thesis research opportunity for students – keep the personal connections alive with regional stakeholders. These connections must be mutual and win-win in order to be maintained in the long-term. It is important, yet challenging to renew the amicable relationship when there are changes in the personnel of the partner organization.



*Figure 1. Students in the university's lab. University of Dunaújváros established its own welding base to support the teaching of applied sciences. On this picture students examine a figure created by the welding robot.*

<sup>13</sup> The term „external experts” refers to the outcomes of the External Stakeholder Focus Group meeting. External Stakeholder Focus Group consisted of representatives of firms (applying UAS graduates) and partner organizations of UASs.

## 2.1.2 Good practices

Some regions in Hungary are more involved in the development of regional strategies than others. Therefore and due to the limited amount of data available, the following section details the examples of the University of Dunaújváros' initiatives related to regional engagement.

### Good practices of the University of Dunaújváros:

The University of Dunaújváros (UoD) re-established its relations with the municipality in 2010 and has been working together on several projects and initiatives since then.

- As the College of Dunaújváros (Dunaújvárosi Főiskola), UoD was involved in the planning of the 2014-20 integrated urban development strategy of Dunaújváros and its area (*Dunaújváros Megyei Jogú Város Integrált Településfejlesztési Stratégiája*). Further information about these is available on the city's Hungarian website.<sup>14</sup>
- The UoD college/university and local-regional employers are also collaborating through student career path linking local and regional secondary schools. To provide the skilled workforce local employees need, the municipality proposed closer collaboration between the local secondary and tertiary educational institutions which has led to the **Integrated Vocational Education Project** (ISZKP, 2015, 2016-) and the **EEPP (DUE FFP, 2018-)**. As a result high school students are offered a comprehensive student career and support programme, which leads to participation in **Dual Study programmes** and local-regional employment (rather than leaving the region for a job opportunity elsewhere). The first students of the Dual Study programmes have just graduated in 2020. Information about their employment status will be available later in 2021 via the university's Graduate Career Tracking system.
- The UoD organizes several annual community engagement activities based on the municipality's request. Furthermore, from 2016 the university is part of the **Modern Cities Programme: Electromobility** subproject at the municipality's request (scientific studies, research, knowledge dissemination activities, popularization events and PR).
- Finally, a university staff member is also a local council employee at the Environmental Department in the Mayor's Office which carries out research on local air pollution and provides knowledge transfer between the two partners.

Regional stakeholders also hold lectures, presentations, and laboratory practice at the UAS institutions. This enhances the reputation and prestige of the firms and as well as opportunities to recruit new talent to their companies, while students can try out the company's tools, appliances and machinery. In addition, stakeholders are also invited to participate in the state examinations as a council or examiners, where they can directly test the capabilities of the fresh graduates. They return to the final exams year after year, because it is an opportunity to acquire fresh employees right after graduation.

There is a comprehensive set of UoD community engagement activities that can be examined on the webpage of UoD<sup>15</sup>.

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<sup>14</sup> <https://dunaujvaros.hu/koncepcioik>

<sup>15</sup> <http://www.uniduna.hu/kereses?searchword=Duna%C3%BAjv%C3%A1ros%20Megyei%20Jog%C3%BA%20V%C3%A1ros&ordering=newest&searchphrase=all&limit=20>

### 2.1.3 Indicators

Hungary currently uses no indicators at the national level. Indicators may be used at the institutional level, but this information is not readily available for every institution.

On an institutional level, in case of the University of Dunaújváros, there are few clear indicators (number and name of local-regional-national partners, name of common projects, name, number and year of common programmes, qualitative reports on their realization, if EU project funded the required indicators, e.g. number of participants). On the one hand, cooperation in regional development strategies is based on requests from local and/or regional authorities for university help directed to the management of the university and leading to legal agreements with their own specific terms, targets and sets of indicators. For instance the agreement between the Municipality of Dunaújváros and UoD about university community engagement activities for 2019 (qualitative indicators). On the other hand, regional development initiatives and programmes are indirectly supported by several past and ongoing EU funded national projects whose indicators are mainly quantitative.



*Figure 2. International students in the lab of UoD. In this picture Hungarian and international students attend courses together to gain competitive knowledge in an international context.*

## 2.2 Regional aspects of higher education teaching and learning

### 2.2.1 Regional aspects of teaching and learning

The aim of the government is to ensure that teaching and learning provided in Hungarian UAS institutions is well balanced, and is aligned with the economic and social needs of the region, as well. Dual study programmes are defined by the Act on National Higher Education. It's aim is to promote UAS cooperation with business organisations within the system of the formal training program. In order to comply with the requirements given in the legislation, UAS institutions have to be in close contact with large regional companies, while implementing the dual training model<sup>16</sup>.

<sup>16</sup> From the *Shifting of Gears in Higher Education: Mid-Term Strategy Policy 2016*

UAS institutions in Hungary gradually began to introduce the concept of dual and cooperative study programmes, a special feature of these institutions. By working in close cooperation with regional industrial and business partners, the university can fine-tune the students' skills to fit the specific job market of the region. The students enrolling in such programs have practical trainings, internships and professional work experience at the UAS's partner facilities. The John von Neumann University in Kecskemét and the University of Dunaújváros have successfully strengthened these courses at their respective institutions, with stable business partnerships.

### 2.2.2 Good practices

Based on the German model of the UAS Duale Hochschule Baden-Württemberg (DHBW), the John von Neumann University in Kecskemét (formerly College of Kecskemét) elaborated its dual education and introduced it starting from the academic year of 2012/2013. At the beginning, there were two big companies participating in the programme, Mercedes-Benz Manufacturing Hungary Kft. and Knorr-Bremse Fékrendszerek Kft., which received altogether 25 students from the vehicle engineering degree programme. Two years later, there were already 20 companies receiving 121 students from four degree programmes in the framework of dual education. In the academic year of 2016/2017, 235 dual students studied in 7 degree programmes, and the number of partner companies has grown to 73. In the Kecskemét model, all students attending traditional or dual education start 13-week educational programmes of both semesters together. While traditional students go on holiday after the 5-week exam period following the study period, dual students take part in an 8-week and 16-week offsite internship/training in winter and summer, respectively, and they also take exams in the meantime. In the 7th semester of their studies, they participate in an internship and work on their thesis paper. Within the timeframes provided by the law, the companies are flexible about the time-off accorded during the exam period, and continuous work relationships are not unusual, either<sup>17</sup>.

With the title "Mercedes-Benz Made in Kecskemét"<sup>18</sup>, John von Neumann University in cooperation with Mercedes-Benz Manufacturing Hungary Kft has launched a new course from the 2020/2021 academic year, focusing on the process of manufacturing and the operation of the factory, demonstrated by colleagues from the Mercedes-Benz factory. The elective course is available for all departments, with 150 study places in total.

Regarding start-ups, based on previous data collection by HRC, there are more than 100 start-ups stemming from Hungarian universities, and based on the fragmented data available, at least 3% of them are from UAS institutions. Most UAS institutions are in the process of devoting more attention to start-ups, encouraging their students, developing business incubators etc. The Budapest Metropolitan University (METU), in the framework of the *National Talent Programme* by the Ministry of Human Capacity, launched the *METU STARTUP LAB*<sup>19</sup> project, allocating 2 796 000 HUF (appr. EUR 7 900) for the project for the 2019/2020 academic year.

**The Internal Stakeholder Focus Group meeting** emphasized the following aspects:

- UAS institutions need to employ teachers who have access to up-to-date knowledge, for example in the form of classes held by regional stakeholders. Involving these experts and businessmen in the education process gives students more up-to-date knowledge, provides hands-on experience and knowledge to complement their theoretical studies, such as visiting factories.

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<sup>17</sup> József Berács et. al. 'Hungarian Higher Education 2016: Strategic Progress Report'.

<sup>18</sup> [https://www.napi.hu/magyar\\_vallalatok/mercedes-benz\\_made\\_in\\_kecskemét\\_neven\\_indult\\_uj\\_tntargy.713703.html](https://www.napi.hu/magyar_vallalatok/mercedes-benz_made_in_kecskemét_neven_indult_uj_tntargy.713703.html)

<sup>19</sup> <https://www.metropolitan.hu/startup-lab>

- Regional stakeholders usually have a moral motivation and personal interest in participating in the UAS's education process as external collaborators or mentors. They also serve as motivation for the students, and show successful examples of implementing the learnt business strategies, philosophies etc.
- In several regions, local governments and other civil organizations have the capacity to keep local graduates, this can be considered by UAS institutions.

### 2.2.3 Indicators

Hungary currently uses no indicators at the national level. Indicators may be used at the institutional level, but this information is not readily available.

## 2.3 UAS Capacity for the region

### 2.3.1 Forms of regional UAS services

Hungarian UAS institutions serve their role in society through providing high-quality education and research in their respective regions, and also aim to provide relevant and useful services in the area of their expertise to the people. There are a number of initiatives from UAS where both, teaching and learning, as well as the provision of services can be realized at the same time.

### 2.3.2 Good practices

Some regions in Hungary are more involved in regional services than others, thus due to the limited amount of data available, the following section details the examples of the University of Dunaújváros' initiatives in the region.

The university provides knowledge transfer by:

- Professional consultation, research and studies (e.g. Modern Cities Programme 2016-:electromobility and environmental studies/DMJV Önkormányzata)
- Conferences (e.g. Science Week/Tudományos Hét)
- Knowledge disseminating series of talks (e.g. Everyone's University/Mindenki Egyeteme, the Roman District Rehabilitation Project 2013-15)
- Scientific knowledge disseminating, STEM and electromobility popularizing events (e.g. Researchers' Night/Kutatók Éjszakája, Green Day, E-Mobility Week)
- Integrated Vocational Education Project (ISZKP, 2015-): see below.
- International Club (2016-): Free and open to all intercultural talks in English by the university's international students and the students of DIVEC (see below) on campus twice a month.

UoD also offers UAS facilities, cultural activities, libraries, science museums:

- DUDIK Festival, a yearly student musical festival
- The local cinema was moved onto the campus while restoration work on the original downtown building is in process (2019-)
- Sponsorship: DFVE (local female waterpolo team), Carissa Cup, Supercup Final, charity running
- Virágos Dunaújvárosért (For a Floral Dunaújváros) competition

- DUFIókák university nursery
- The organization of blood donations, first aid trainings, annual charity ball for the local hospital, sport day for the local mentally handicapped people, various donation and environmental cleaning activities (for autistic children, for poor children, #trashchallenge, etc.).

### 2.3.3 Indicators

On the national level, different types of quantitative indicators are requested if the regional service/engagement activity is funded by national projects. The motivation for using them is to signal the achievement of target outputs of a certain project phase, or subproject.

SWOT Analysis:

- Strengths: quantitative indicators are easy to use.
- Weaknesses: mainly the number of participants/programmes/publications, etc. is asked without relevant quality measurement, or follow-up on impact.
- Challenges: data is scattered internally, or often missing altogether. The problematics of national/institutional comparison (“One-size-does-not-fit-all” approach).

Recommendations for improvement include the quality, supporting and hindering factors of execution, and the impact on the targeted audience of the programme/project/cooperation should also be taken into consideration/measured. A suggested solution for the issue could possibly be TEFCE.

On the institutional level, due to the limited amount of data available, the following section details the examples of qualitative + quantitative indicators of the University of Dunaújváros’ initiatives in the region. These indicators are used for project administration, preparation for decision making, such as university strategy, partner accounts, reporting to local-regional partners (e.g. the local municipality), and the development of the activities’ quality and impact.

SWOT Analysis:

- Strengths: quantitative indicators are easy to use. The institutionalization of yearly recurring activities (scheduling, organization, key persons/staff, PR). Internal qualitative research on 3rd mission and community engagement activities (doctoral research).
- Weaknesses: Services/events/activities’ financing is mainly based on tenders. Typically, the number of participants/programmes/publications, etc. is asked without relevant quality measurement, or follow-up on impact.
- Challenges: Data is scattered internally, often missing data. The problematics of national/institutional comparison (“One-size-does-not-fit-all” approach).

Recommendations for improvement: the quality, supporting and hindering factors of execution, and the impact on the targeted audience of the programme/project/cooperation should also be taken into consideration/measured. Also, the TEFCE framework is worth for the mapping and evaluation of community engagement activities. Setting clear strategic aims and expected benefits, as well as learning outcomes (service learning opportunity for participating students!) for the community activities.

The UoD uses only the tender/project indicators and qualitative data from internal documents.

### **UoD's suggestion for further indicators:**

- The annual number of regional partnerships and partners (new and ongoing) in regional service
- Sector of cooperation
- Type of regional service
- Target audience of cooperation
- Number, sex, age, occupation, school/workplace of regional service customers
- Overall aim of partnerships
- Annual targets of partnerships
- Quality standards/aims of service activity
- Annual achievements (with both quantitative and qualitative indicators as relevant to the nature of the service provided)
- Communication of results as knowledge transfer to the scientific-professional community
- Communication of results and knowledge dissemination to the local-regional and national public/stakeholders)
- Benefits to the local/regional community
- Follow-up on impact (as relevant and one year later)

### External experts identified further indicators:

- The UAS's income from industry collaborations/agreements
- Number of projects and agreements, or number of cooperation topics
- Number of thesis topics and/or internships positions offered by the given company
- How many employees of the company participate in the UAS's courses?
- How many former interns of the given company received employment after graduation?
- How much does the company contribute to the national GDP?

## **2.4 Applied Research and Innovation**

### **2.4.1 Applied research in UAS**

As of 2019, Hungarian higher education became the responsibility of the Ministry of Innovation and Technology. As a part of their strategy, the aim is the development of a university-centred innovation ecosystem, which entrusts a central role to HEIs. Aligning with this strategy, UAS institutions cooperate with companies and enterprises on research and innovation projects, mainly involving key regional players and national partners.

The Internal Stakeholder Focus Group underlined that these regional industry actors often order research services from the universities, but do not allow them to make the research results public. Therefore, the UAS cannot exactly benefit from the result of their research, and it cannot lead to publications.

The UAS institutions have hands-on knowledge of their own region, which gives an added value to their research. On the other hand, UAS institutions are aware of regional demand service-wise, not necessarily research-wise, and thus they can respond with relevant services that relates to the scientific fields they deal with. These services can also respond to the needs of public bodies. The research assignments and services are unique due to the conditions in

which the profiles of UAS institutions are being formed. UAS institutions traditionally react to the needs of the region by providing degree programs aligned with the local specialties, such as oenologist/wine-growing HE programs in wine-growing regions. The related research – dealing with actual, relevant issues – can hence provide the region with an added value.

In some regions community engagement activities are strengthened through UAS – Civil Organization collaborations (e.g. in case of Dunaújváros).

#### 2.4.2 Good practices

In the case of the University of Dunaújváros, applied research is coordinated by Industrial Development Centre (Ipari Fejlesztési Központ, <http://www.uniduna.hu/rolunk/k-f-i>), in close collaboration with Ecotech Nonprofit Zrt. (<http://ecotechnpzrt.hu/>). The university collaborates mainly with national industrial partners in R&D.

- Some of the main national partners include public transportation companies, such as MÁV Start Zrt, MÁV HÉV Zrt, MVM Paksi Atomerőmű Zrt. responsible for the operation of the atomic plant, and other partners involved in large machinery production, car manufacturing, trade operations and so on (such as: Sapa Kft. (Hydro Kft.), Hoffmann-Sopron Kft., Eastimpex Kft., Kingspan Kereskedelmi Kft, Bosch Group, Delfort Group, Admatis Kft).
- Main regional partners: Alcoa Kőfém Kft. (Arconic Kft.) specializing in aluminium product and machinery; and Videoton Holding Zrt, the largest privately owned industrial group of companies in Hungary.
- Main local partners: coal production companies ISD Dunaferri Koksoló Kft. and ISD Dunaferri Zrt., the South-Korean tire company's Hungarian branch Hankook Tire Magyarország Kft, and containerboard company Hamburger Hungária Kft.

Since 2016 the Institute of Informatics at UoD and Secudit (a Veszprém based national partner) is working on a joint research project which is based on UoD's distributed vulnerability assessment (DVA) methodology. This methodology provides ongoing measures to address the specific vulnerabilities to current cyber-threats. Timely recommendations to modify and adapt an enterprise's defence mechanism allows the enterprise to protect itself by making minimal rapid adjustments. Secudit alerts executives, department managers, and IT staff to cyber-security vulnerabilities and recommends remedial actions. Unlike „Security Information and Event Management“ (SIEM), Secudit is not part of the operational incident response system. Rather than supporting real-time responses to specific security incidents, Secudit supports the continuous improvement of an enterprise's incident response preparedness by exposing evidence-based weaknesses in the current incident response plan, policies and deployment. All Secudit services are supplemental: it neither integrates with nor substitutes for any existing IT and cybersecurity systems.

The Budapest Business School's Budapest LAB – Entrepreneurship Centre<sup>20</sup> aims to boost initiatives to establish business and to develop entrepreneurial attitudes; to support and foster Hungarian SMEs by creating and equipping them with a necessary knowledge base. Budapest LAB is engaged in the following activities:

- joining international research projects and performing applied research activities in order to provide Hungarian businesses with relevant knowledge; publishing the LAB's research results in an easy-to-understand way so that these results get incorporated in common and everyday knowledge;
- launching the Family Business Research Programme, which is the first project in Hungary to focus on this sector of the economy;

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<sup>20</sup> More information: <https://budapestlab.hu/index.php/about-budapest-lab/>

- sharing the accumulated business and entrepreneurship related knowledge with the widest possible circles in an interesting and easy-to-consume way with the help of the LAB's online magazine, printed publications and public events;
- inspiring both to entrepreneurs and to those planning to start a business, and developing training courses related to topics and areas relevant to entrepreneurship.

Budapest LAB – Entrepreneurship Centre's Family Businesses Research Project<sup>21</sup> is a long-term research project about Hungarian family businesses which is increasing in importance. Hungary's national economy necessitates the research of such enterprises despite the fact (or for that very reason) that the Hungarian Central Statistical Office does not collect data concerning this type of businesses. Even if recent decades have seen a rapid increase in the number of publications about family businesses, researchers of this area advocate further scientific investigations so that university professors, authorities, advisors and managers can better understand, support and facilitate the development of such businesses.

Regarding knowledge sharing with stakeholders, BBS shares knowledge about their main topics and research with the wider public and stakeholders. In addition to scientific publications, they publish research results in a comprehensible way on their platforms and in the press, in many cases within the framework of self-organized events. For example, novice entrepreneurs and those who are planning to start a business can learn from and be inspired by successful entrepreneurs in the StartLAB Entrepreneurial Club series, which has existed since 2018. In cooperation with K&K Magazine for SMEs, BBS regularly organizes conferences to facilitate the utilization of research results and the sharing of experiences, especially for family business leaders.

The Internal Stakeholder Focus Group underlined the following good practice examples:

- A few UAS institutions have established companies in order to better manage partnerships with regional stakeholders. These companies can form contracts and better manage financial transactions related to R&D project contracts.
- One institution has a research office that works on promoting the UAS's research and distributing it to the regional stakeholders, finding business partners for research.
- In the Viticulture and Enology sector, one of the UAS institutions has great business connections and relationships with the regional stakeholders, allowing their students to complete internships and dual education programmes in collaboration with the regions' wineries. The good relationship also means up-to-date information, and long-term research opportunities as well.



*Figure 3. BBS' Kitchener. In this picture a student of Budapest Business School prepare degustation menu during practice part of the course.*

<sup>21</sup> More information: <https://budapestlab.hu/index.php/a-family-business-is-family-business-merely-in-its-name-in-the-case-of-the-first-generation/>

### 2.4.3 Indicators

Hungary currently uses both qualitative and quantitative indicators at the national level, but further information is not readily available.

**According to the Internal Stakeholder Focus Group** indicators should help in identifying the benefits of cooperation, and making them more marketable, measurable for companies and regional stakeholders. Therefore, stakeholders should better understand how UAS cooperation could benefit their sector. The most important aim of developing indicators is for institutions to be able to monitor and measure their development in their respective region. Since each region has different attributes and strengths and challenges, indicators should be developed in consideration of the institution's own region. Apart from the horizontal, a vertical point of view should be considered as well.

Indicators should be used very carefully, and for the sake of consistency, it is important to apply indicator in similar regions. This is the only way to retrieve meaningful indicators and related data.

Some basic indicator proposals have been composed:

- How many partners does the UAS have in any cooperation activity?
- How many partners does the UAS have in a given research field?
- Number of UAS graduates employed in the region
- Number of UAS graduates employed in the profession their diploma refers to
- Number of regional actors of the industry willing to employ students for professional practice

## 2.5 Social Innovation

### 2.5.1 Overview

Following all Hungarian higher education institutions, UAS are also engaged in a number of social innovation activities and strive to address social challenges. Most of these form a part of the institutions' third mission and related activities, they aim to raise awareness to environmental issues, caritative activities, the promotion of STEM subjects and research. Some of these project also run with support, or in collaboration with European Union projects as well. Due to challenges in allocating funding and the lack of universal solution to each regions social and economic issues, the problems of poverty, climate change, and the lack of proper education are a constant topic for all the regional players involved.

### 2.5.2 Good practices

As a part of the Horizon2020 research and innovation programme, Hungary organizes the Europe-wide annual open day programme, called "Researchers' Night" ("Kutatók Éjszakája") which is a flagship programme all over Hungary. During this event, museums, exhibitions, university laboratories and displays become more open to the public for one night, allowing everyone to get a glimpse of the lives and achievements of researchers, therefore contributing to the popularization of research careers, sciences and STEM subjects. Apart from the universities, a number of other research organizations are involved as well.<sup>22</sup> At the University of Dunaújváros for example this includes interactive presentations in physics; various experiments in chemistry, mechanics, materials science and IT; laboratory and studio visits, the

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<sup>22</sup> More information on the current year's event: <https://kutatokejszakaja.hu/>

showcasing of robots, drones and more. This is the most popular event that the university organizes each year as it draws a large audience to the institute and science itself. This year there were some 1500 participants attending over 30 activities. In order to reduce student dropout, between 2012 and 2018 University of Dunaújváros developed an innovative study support system, the HASIT Programme i.e. Programme for the Support of Student Success that combines study-specific mentoring with an online study management system, which monitors student progress, i.e. the AVATAR Programme. As a result, the percentage of student dropout after the first year of its initiation has decreased from 20% in 2011 to 9% in 2017.<sup>23</sup> To further help the graduation of its students, the university also provides free language examination preparation in English up to the CEFR B2+ level.

At the Budapest Business School (BBS) initiated the “Responsible and Sustainable University Strategic Goal” to ensure responsible and sustainable education and research at the institution. For the implementation of the strategy, in September 2017 the management of the university set up the BBS Sustainability Council of outstanding experts who agreed to work pro bono in the Council with five external and two internal counsellors. The main responsibility of the Council is to follow up the achievement of the intended goals of the sustainability strategy, to support the internal development and to participate in the communication of the positive results of sustainability performance. The Sustainability Network was also formed in September, 2017. It serves as the coordinator body of university level sustainability projects. The members of the network had also been requested by the management of the university. They are lecturers, students and other professionals of the university. Their main task is to monitor sustainability projects, to support internal communication and submitting new project ideas. Both the professional and operational support of these units, players and processes is provided by the Sustainability Centre, which was formed in October, 2017. The main responsibilities of the Centre are to provide support for communication on sustainability, continuous support of internal learning on sustainability, professional representation outside the university, measuring goal attainment and coordination of data on sustainability.

### **Responsible and Sustainable University Strategic Goal – highlights of good practice examples**

- Responsible Education and Research
  - **Responsible and sustainable corporation course:** mandatory at all Bachelor’s programs in business in all forms of training both in Hungarian and English with guest lecturers representing social entrepreneurship (e.g. KockaCsoki, MagNet Bank)
  - **Higher Education Program for Excellence:** the main focus of the research is the sustainability of SMEs including their ecological footprint and entrepreneurship run by people with disabilities.
  - **Senior Academy at Zalaegerszeg Faculty** from 2016 with different topics such as finance, consumer protection, well-being, tourism, sustainability etc. Since 2016 more than 300 participants joined the programs initiated by BBS which was very popular among senior citizens.
  - **Onboard Furniture:** within the Team Academy Specialization at Faculty of Finance and Accountancy a group of students founded a firm with the business model of making new outside furniture, accessories from used skateboards as part of recycling and circular economy

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<sup>23</sup> Source: UoD self evaluation report for the 2019 accreditation process. For a detailed description of the programme visit <http://uniduna.hu/oktatas/hasit>

- Building BBS's Community
  - Voluntary Activities: strong cooperation with various non-governmental organizations (e.g. Hungarian Food Bank Association, Eco-Generation of the Future Foundation) with the involvement of students and colleagues to raise awareness of social challenges and organize joint activities (Christmas Food Collection)

### 2.5.3 Indicators

Hungary currently uses no indicators at the national level. Indicators may be used at the institutional level, but his information is not readily available.

## 2.6 Lifelong learning

### 2.6.1 Overview

As an initiative to promote lifelong learning, Senior Academies, which are a series of courses and talks for the elderly, are becoming more and more widespread over Hungary. These lectures have a solid audience among the elderly population, but it is important to mention that Senior Academies are not a typical characteristic of UAS institutions only, since most of the other universities have such initiatives as well.

### 2.6.2 Good practices

#### Senior Academies:

- Budapest Business School (BBS)<sup>24</sup>
- Milton Friedman University: <https://uni-milton.hu/szenior-akademia/>

#### Further examples from the UoD:

- Dual Study Programmes
- UoD EEPF and International Club
- Higher Level Vocational training programmes (mechanical engineering, business administration, communication and media, IT)
- Postgraduate Specialist Training Courses (a wide variety, see the university's website: <http://www.uniduna.hu/oktatas/kepzesek/>)

### 2.6.3 Indicators

Hungary currently uses no indicators at the national level. Indicators may be used at the institutional level, but his information is not readily available.

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<sup>24</sup> <http://www.aol.hu/kozelet/helyi-kozelet/senior-akademia-a-bge-n-orom-latni-a-tudasvagyukat-3091055/>

### 3. Summary

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Although UAS institutions are new and just beginning their development in Hungary they already have existing relationship with regional partners, and are deeply engaged in their respective regions. This is mainly due to the fact that most of them were transformed from already existing institutions. Due to their geographical location, education profile and research areas, regional stakeholders are more likely to collaborate with UAS. A clear strength of UAS is their improving regional presence and engagement, yet there is always more room for improvement, to enhance cooperation, boost the visibility and international standing of regional UAS institutions.

There is a lack of national indicators for the majority of regional engagement areas, some institutions provide a small insight into the indicators on an institutional level. Since UAS structure is a relatively young concept, further development of indicators is necessary.

## 4. Literature

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