

# Higher Education Institutes and the Twente Board

## Policy Report

---

**WORKING PAPER # 01/2019**

**DOI:** 10.3990/4.2535-5686.2019.01

Available at: <https://runinproject.eu/results/working-paper-series/>

**RUNIN Project**

**Summer School “Universities and Regional Impact”**

**25<sup>th</sup> - 29<sup>th</sup> June 2018**

**Enschede, the Netherlands**



## Authors

**Rhoda Ahoba-Sam**

University of Lincoln (GB)  
[rahobasam@lincoln.ac.uk](mailto:rahobasam@lincoln.ac.uk)

**Kwadwo Atta-Owusu**

Universitetet i Stavanger (N)  
[kwadwo.atta-owusu@uis.no](mailto:kwadwo.atta-owusu@uis.no)

**Gerwin Evers**

Aalborg University (DK)  
[evers@business.aau.dk](mailto:evers@business.aau.dk)

**Liliana Fonseca**

University of Aveiro (P)  
[liliana.fonseca@ua.pt](mailto:liliana.fonseca@ua.pt)

**Sofya Kopelyan**

University of Twente (NL)  
[s.kopelyan@utwente.nl](mailto:s.kopelyan@utwente.nl)

**Aleena Meloyan**

Osnabrück University of Applied Sciences (D)  
[aleena.meloyan@gmail.com](mailto:aleena.meloyan@gmail.com)

**Huong Nguyen**

Universitat Autònoma de Barcelona (E)  
[HuongThu.Nguyen@uab.cat](mailto:HuongThu.Nguyen@uab.cat)

**Maria Salomaa**

University of Lincoln (GB)  
[msalomaa@lincoln.ac.uk](mailto:msalomaa@lincoln.ac.uk)

**Utku Ali Riza Alpaydin**

Universitetet i Stavanger (N)  
[utku.alpaydin@uis.no](mailto:utku.alpaydin@uis.no)

**Ridvan Cinar**

University of Aveiro (P)  
[rcinar@ua.pt](mailto:rcinar@ua.pt)

**David Fernández Guerrero**

Aalborg Universitet (DK)  
[dfg@business.aau.dk](mailto:dfg@business.aau.dk)

**Eloïse Germain-Alamartine**

Linköpings Universitet (S)  
[eloise.germain@liu.se](mailto:eloise.germain@liu.se)

**Sergio Manrique**

Universitat Autònoma de Barcelona (E)  
[sergioandres.manrique@uab.cat](mailto:sergioandres.manrique@uab.cat)

**Saeed Moghadam Saman**

Universitetet i Stavanger (N)  
[saeed.moghadamsaman@uis.no](mailto:saeed.moghadamsaman@uis.no)

**Lisa Nieth**

Universiteit Twente & Regio Twente (NL)  
[l.nieth@regiotwente.nl](mailto:l.nieth@regiotwente.nl)

**Mirjam Schuijff**

University of Twente (NL)  
[m.j.schuijff@utwente.nl](mailto:m.j.schuijff@utwente.nl)

**Edited by Lisa Nieth** • Universiteit Twente & Regio Twente (NL) • [l.nieth@regiotwente.nl](mailto:l.nieth@regiotwente.nl)

## Content

THEMES	PAGES
Organisation of the Twente Board and Regional Networks	3-18
Higher Education and the Development of the Twente Board	19-38
Making ‘Twente Works’ Work - High Tech & Human Touch	40-52
Appendix	53-54

# Organisation of the Twente Board and Regional Networks

**How can the Twente Board align universities, businesses, government and society for innovation and regional development?**

## Contents

1.	Introduction .....	3
2.	Mapping the Twente Board puzzle.....	5
2.1.	Contextualisation.....	5
2.2.	Starting to re-sort the pieces of the puzzle.....	6
3.	Insights from the interviews and initial recommendations .....	6
4.	Analysis of the Literature .....	9
5.	Best Practice Examples.....	12
6.	Recommendations .....	14
7.	References.....	16

## 1. Introduction

There is an increasing realization that regional economic development depends on the cooperation of innovation actors. The systemic interactions and linkages among higher education institutions (hereafter HEIs) and firms in the pursuit of innovation engender regional competitiveness. Of equal importance is the ability of public or private agencies to provide an enabling environment: policies, rules, certain infrastructures and incentives for regional actors to collaborate. Whilst this supportive role is imperative, there is marked variation in the manner these agencies perform this function in different regions. Peripheral or former industrial regions (like Twente) suffer from weak institutional capacity, as well as misalignment between science base and knowledge users. As such, organizations tasked with the mandate to coordinate the activities of regional actors are not able to work effectively. Notwithstanding these structural weaknesses, such regions could extricate themselves from the clutches of decline if they strengthen institutions to play their coordination role efficiently.

It is against this background that we set out to diagnose the bottlenecks that have plagued the efficient functioning of the Twente Board and to suggest remedial actions. The Twente region's economy has been struggling since the decline of the textile industry. What used to be a bustling manufacturing region is now home to small and medium sized enterprises (SMEs) and start-ups mostly spawned from the University of Twente (UT). Although UT and the region have encouraged the setting up of creative ventures, a relevant unemployment challenge persists. In order to mitigate this challenge and make the region attractive for investment, the region set up a strategic body, the Twente Board, to oversee its development

strategy. As part of its mandate, the Board is meant to spearhead the economic agenda of the region, facilitate cooperation among regional stakeholders and contribute to the branding of the region. Whilst these are all important, we see the system-connecting role as the priority that the board needs to focus on.

The report is the result of fieldwork conducted during the RUNIN Project Summer School, which was held in Enschede on June 25<sup>th</sup>-29<sup>th</sup> 2018. During the week, the RUNIN researchers had the opportunity to explore the case of Twente and assess the role of HEIs in the innovation and development of the region. A number of interviews with regional stakeholders in leading positions in local government and academia were conducted, and served as the main input of the analysis in this document. This report aims at providing recommendations on how to improve the role of the Twente Board and the regional HEIs in the development of the region of Twente through innovation. The three HEIs are the University of Twente (UT), Saxion University of Applied Sciences (SUA) and ArtEZ University of the Arts.

In order to elaborate the recommendations, the authors rely on:

- Interviews with stakeholders from the region of Twente, reports on the innovation and development strategies pursued at the region;
- Literature on the role of universities in innovation and regional development and;
- Examples of best practices developed in other European regions.

4

The focus of the report is on the reorganization of the Twente Board in order to perform effectively its coordination role in the region. We examine the extent to which the Board can contribute to the attainment of the regional strategic goals by analysing the board's existing structure. We do this by evaluating the allocation of roles and the policies governing their activities. The aim of this exercise is to identify the weaknesses in the current working and policies of the board to offer alternative policies based on best practice models elsewhere.

The key issues arising from the analysis of the interviews and other materials are as follows:

- The neglect of some stakeholders in the strategic agenda;
- Redundancy in regional networks;
- The role of the Twente Board as network-connector and;
- Harnessing the potential of supra-national networks

Based on the analysis and the review of best practices models in other European countries, the report prescribes these recommendations:

- The Twente Board should enhance its coordination role and streamline the interaction among regional actors.

- The Regio Twente should empower the board to play its coordination role effectively.

The rest of the report is structured as follows. In the chapter below, we present the context of the study by reviewing the challenges faced by the region and the Twente Board. This is followed by a discussion of the observations and findings from the interviews and other materials. Afterwards, we draw on existing literature and the preliminary findings to analyse the case. Another chapter provides some best practices examples that underpin our recommendations. Finally, a set of recommendations addresses the challenges confronting the board in its function.

## 2. Mapping the Twente Board puzzle

### 2.1. Contextualisation

Small and medium-sized companies as well as a growing number of high-tech start-ups, mainly originating from the UT support system, dominate the economic structure of the region. Because of this, the UT and the region are regarded as highly entrepreneurial. The region can count on a comparatively large manufacturing sector followed by a robust trade and healthcare sector. Due to the limited presence of big companies in the region, the ecosystem depends on the SMEs and the HEIs as employers, managers of the innovation ecosystem and knowledge creators/distributors. In comparison to the national average, the Twente Region has been struggling with higher and long-term unemployment rates as well as slow economic growth. The region is often perceived as being ‘distant’ from more populated areas of the Netherlands (e.g. the Randstad) and shares a border with Germany to the East.

5

In order to create a strategic body that combines the existing and important regional stakeholders, the Twente Board was created around 2014, after the multiplicity of former strategic bodies - like economic and industry boards - did not fulfil the interests and expectations posed by the regional stakeholders. The Twente Board currently consists of 10 members representing different institutions such as the regional business sector, the different levels of governance like the city, the region and the province and educational institutions like the vocational education and training school ROC Twente, the SUA and the UT. In parallel to the *Agenda van Twente*<sup>1</sup>, a regional development strategy designed and implemented by the 14 municipalities of the Twente Region, the Twente Board has its own activity agenda under the name “*Twente werkt!*”.

---

<sup>1</sup> NB. The *Agenda van Twente* was the regional strategy performed until 2017, and that has now been replaced by the *Agenda voor Twente*, starting from 2018.

In line with the current regional focus on high technology, the action plan - designed on the basis of recommendations of a set of external advisors - is also focused on the strengthening of the “*High Tech Systems and Materials*” sector. Additionally, a focus on the flourishing of SMEs in the region, a generally attractive business climate, a sustainable labour market and employment (e.g. the international competition for talent) are focal points highlighted in *Twente werkt!* Overall, the vision of the Board is to develop the Twente Region into a leading technological region in Europe. This high-tech focus has been legitimised with numbers like a growing employment in this sector in contrast to the rest of the Netherlands. In addition, the focus and number of students with an engineering profile and technical training is higher in Twente than in the Netherlands.

### 2.2. Starting to re-sort the pieces of the puzzle

Recently, the Twente Board has joined forces with the ‘Twents’ municipalities and has taken a leading role in shaping the new regional agenda, the *Agenda voor Twente*<sup>1</sup>. This ‘cooperation’ of the regional strategic body and the strategic agenda has the potential to re-focus regional initiatives and projects. In line with this, the Twente Board can become a meeting point and coordinating actor among HEIs, industry, local authorities and citizens, with the objective of enhancing the role of HEIs in the innovation and regional development of Twente.

6

This report focuses on two main aspects:

1. The organisation and coordination of the formal and informal networks that exist in the region of Twente.
2. The organisation of the Twente Board itself, as coordinator of other formal and informal networks in the region.

A cursory look at the region of Twente reveals that a considerable number of institutions operate in the regional ecosystem. The interactions among actors have led to the creation of formal and informal networks that could be harnessed for regional development. Nevertheless, the difficulties of the leading body to spearhead the coordination and smooth operation of these networks is hampering the development of the region. The Twente Board, being a voluntary organization, lacks the authority and resources to institute actions that will help in the achievement of its goals.

### 3. Insights from the interviews and initial recommendations

This chapter provides a summary of the main findings from the interviews, with a focus on the role of formal and informal networks in Twente regional development.

### ➤ *Triple Helix collaborations and top-down approach*

UT is involved in many projects in the form of a Triple Helix collaboration, which are both formal and informal. Similarly, Stam *et al.* (2016, p. 40) highlight that HEIs in Twente are highly involved in the Twente network. Twente is aiming at identifying key strategic areas for regional development based on their innovation potential. This is expected to better involve Triple Helix stakeholders in the region. However, there is a strong drive towards high-tech solutions in the Twente Board, leaving a secondary role to forms of innovation that are not (mainly) technological. This leads to several problems in the region. For example, graduates may not meet the needs of the regional labour market and non-high-tech businesses might not feel represented by the Twente Board's actions. The current conception of Triple Helix at Twente Board, which includes representatives from entrepreneurs, governments and research institutes, tends to distort the wider concept developed in academia (explained in section 4). Moreover, the role of citizens or societal users is critical especially in recognizing the current regional problems. Yet it has been neglected in the innovation process in the region of Twente.

In line with this, the OECD review of the Twente region already identified this challenge in 2006. The report stated in part that there is “no recognition of the need to address [...] poor performance figures through promoting social and community innovation” (Garlick *et al.*, 2006, p. 25). Subsequently, it recommended that “HEIs open a dialogue with regional stakeholders [...] who might believe that higher education is not for them” (*ibid.*, p. 45).

7

### ➤ *A paradoxical redundancy in regional networks*

Twente's networks comprise a web of relations at the local as well as regional and supra-regional levels. At each level, these networks comprise a set of diverse actors with e.g. educational, entrepreneurial, and public governance capacities. However, there is a redundancy of networks reflected on overlapping members and duties, and people still waste a lot of time looking for each other. In addition, there is also a generational issue in the management of the regional networks: in some organisations there is still a reluctance in working together with other stakeholders, which contributes to the network redundancy. All institutions should literally open their doors, so that each stakeholder can get an awareness of the knowledge, skills and mindset other stakeholders have. The different networks should look more at each other and align with each other.

The propensity to “further increase the institutional complexity of the region, by continually adding new initiatives, teams and taskforces to the existing landscape of collaborative bodies” has been identified by other studies about the region (see Stam *et al.*, 2016, p. 73). Stam *et al.* (*ibid.*) also argue that Twente has (1) the highest average number of partnerships, (2) the highest density and highest connectedness of partnerships and (3) the lowest average distance between nodes.



Nevertheless, even though a potential partner is only ‘three handshakes away’, it might take a long time to find the suitable one, if there are too many partners to choose from (too many hands to shake).

➤ *A consensus on the Twente Board being a network-connector*

For HEI-industry relationships, it is crucial that both companies and universities have similar expectations regarding the aims and investments in this relationship. A mismatch can thus lead to unrealistic expectations that are not met and misunderstandings concerning the roles and tasks different partners have within partnerships. The Twente Board can play a vital role in aligning these expectations through their extensive networking capabilities. This is something very relevant and important not only in large cities, but also in peripheral areas.

Considering the representatives from the Triple Helix (academia, industry, public sector) in the Twente region, the Twente Board has a unique position and the possibility to mobilize actors from these different helices and promote participation and representativeness of the regional innovation system in the policy arena and agenda setting. Also, economic issues like labour market need to be analysed and addressed at the regional level. An entity like the Twente Board has the potential to act at the local level by exploiting the existing local informal and formal networks in order to orchestrate the local interests under the regional agenda that addresses challenges with regional scope. It can serve as an “umbrella” agency, not obfuscating the other agencies and/or networks in the Twente region, but enabling a more coordinated and guided action between them. In a representative capacity, the Board will be able to translate directly the needs of numerous institutions.

8

The role of the Twente Board is also to connect people and resources for the region: it can convince funders, through informal networks in particular, but also bring companies, education, research and government together, through Triple Helix collaborations. Given their newly-found position, the Twente Board can become a facilitator of knowledge exchanges and innovation through consultancy and agenda-setting for the strengthening of the regional economy. This implies interconnecting networks on the local level, mobilising potentially scattered resources and other local actors for the improvement of the region’s infrastructure, image and innovative capacity. In 2006, the OECD already suggested that the interface between HEIs and the region needs to be strategically managed in “*in such a way that all people in the region have a “feeling” for the region’s HEIs, and understand what the HEIs can offer them when they have particular needs*” (Garlick *et al.*, 2006, p. 46). We propose that this strategic management role could be taken on by the Twente Board.



### ➤ *The potential for supra-national networks*

The existence of Euregio as a cross-border region, which connects Twente region with a number of bordering Dutch and German regions, has provided a basis upon which informal and formal networks of the regional actors can be expanded and exploited. While cross-border higher educational relationships have led to the recognition of the UT by German students, the same level of recognition of the university by German businesses has not emerged yet. This impedes the applied knowledge exchange between the two sides of the border, while the informal networks created based on the presence of German students in the region provides an opportunity for the university to launch formal networks with the German businesses. This could be related to the argument that the increasing knowledge production of the HEIs in the region cannot be completely absorbed in the region itself (Stam *et al.*, 2016, p. 81). Thus, a more intense interaction through networks with partners on the German side could enhance the potential knowledge application.

### ➤ *Summary*

Considering the findings from the interviews, it has been identified that the two main improvement opportunities concerning the **organization of the Twente Board and the networks** that exist in the region can be split into external and internal challenges from the perspective of the Twente Board, as presented below:

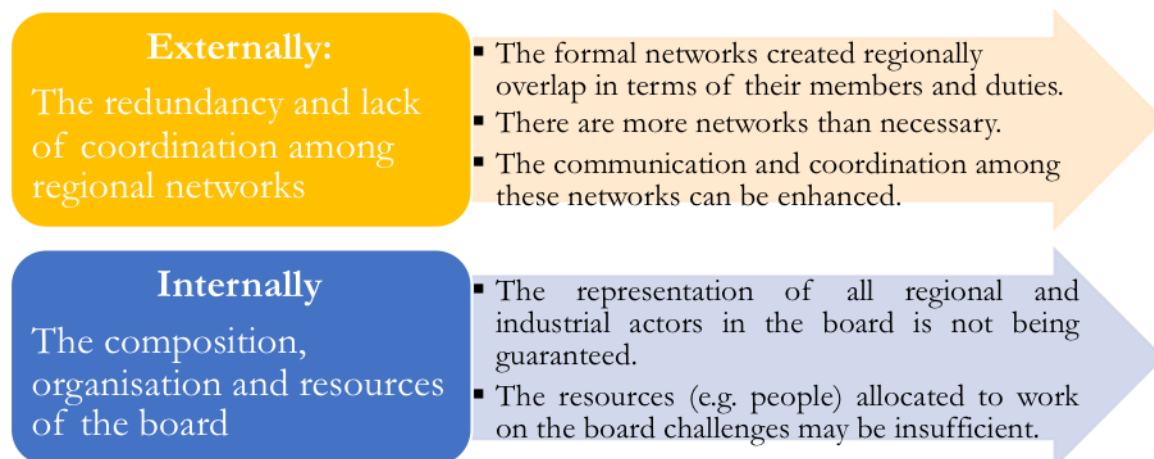


Figure 1 - Main Challenges of Twente Board

## 4. Analysis of the Literature

Academia has broadly researched regional development and innovation, studying the role that universities and other regional stakeholders play in such issues. Here we provide an overview of some relevant theoretical insights that help to better understand the challenges mentioned in the previous chapter.

The distinct role played by regional stakeholders in the development and innovation of a region has received great attention from researchers in regional and innovation studies. As part of regional innovation, new relationships among regional stakeholders emerge for serving the diffusion of knowledge (e.g. skills, best practices) in a geographical area. This situation has been represented by the concepts of national (Lundvall, 1992; Nelson, 1993) and regional (Cooke *et al.*, 1997) **innovation systems** (RIS), which have got to influence and shape policy-making in many regions around the world, as in the case of the European Union and its policies for innovation and regional development, which also follow other conceptual frameworks such as smart specialisation (McCann & Ortega-Argiles, 2015) and entrepreneurial discovery process (Kirzner, 1997). Smart specialisation refers to the identification of strategic areas in regions to canalise innovation investments considering the regions' industrial and economic characteristics, while the entrepreneurial discovery process refers to the involvement of different stakeholders in the identification of these potential opportunities related to innovation for regional development, in a process led by policy-makers and regional authorities. Another relevant concept is the Triple Helix of innovation (Etzkowitz & Leydesdorff, 1997; Etzkowitz, 2003) as a model that portrays universities, governments and industry as three key players for achieving regional innovation in a global knowledge economy. In this sense, universities and other HEIs have been recognised as important actors for regional innovation, being key knowledge infrastructures (Charles, 2006) and valuable partners for industry (Perkmann & Walsh, 2007) within RIS, which has supposed the development of a new socioeconomic mission beyond research and education (Laredo, 2007).

10

What these different theoretical frameworks have in common is a **stakeholder approach** in which both the distinct role played by regional stakeholders (universities, governments, industry) and the coordination among them determine the success of regional innovation. These conceptual models recognise the positive impact of the coordinated interaction among regional stakeholders on the development of regions through, for instance, knowledge spillovers and economic growth (Grossman & Helpman, 1991). Some of the networks connecting regional stakeholders may arise formally and under the control of leading stakeholders (regional authorities); however, several informal networks emerge as the result of R&D collaborations across organizations (Kreiner & Schultz, 1993) and become important for regional innovation.

In this respect, Twente counts with dense networks but overlaps and lack of coordination among networks are common, in part as a consequence of establishing new formal networks on top of the already existing ones to address new problems (Stam *et al.*, 2016, p. 73). The insights from the interview analysis seem to point in a similar direction. Hence, a finer alignment of already-existing networks, formal or informal, could increase the ability of

regional stakeholders to coordinate their actions to stimulate innovation in Twente, by using ‘strong ties’ (Granovetter, 1973), or the connections that they already share: Twente stakeholders tend to share close-knit connections, and these links can contribute to the rapid sharing of information among them. By the same token, these dense networks can be used to steer stakeholders around common projects. ‘Strong ties’ could also be used to overcome differences in norms and expectations, that is, institutional distance (Boschma, 2005) between stakeholders: firms, universities and governmental actors operate according to different norms, and continuous interactions might be required to coordinate actors with different norms and expectations.

Moreover, a more precise management of the already-existing networks might provide better hints of which stakeholders are not well connected to innovation projects, and how should they be better connected. These efforts could help Twente benefiting from ‘weak ties’, that is, connections beyond the core of the network that can bring new knowledge into it (Granovetter, 1973). For example, a better connection with less powerful stakeholders in Twente, such as rural communities or poor urban neighbourhoods (Garlick *et al.*, 2006) and traditional, non-R&D intensive businesses could contribute to extend innovativeness and entrepreneurship beyond high-tech firms, whilst uncovering innovation and entrepreneurship opportunities in, for example, social and community innovation. In order to be able to manage these ties, the Twente Board would need a stronger internal structure, as it *“is highly dependent on the administrative support and project management capacity offered by governmental agencies [thereby creating] a tension between the intentions and policies developed in the tripartite constellation of the board itself and the capability to make these intentions and policies work”* (Stam *et al.*, 2016, p. 80). Similarly, Groenleer *et al.* (2018) have highlighted the *“limited support capacity”* as well as the limited access to budgets (apart from the money used to keep the board running) of the Twente Board.

Also, organisations such as knowledge-intensive service businesses, large and extra-regional firms or the regional HEIs can provide Twente with weak ties to extra-regional or international stakeholders, strengthening the profile of Twente as an international innovation hub and bringing new knowledge into the region (Fitjar & Rodríguez-Pose, 2011; Rodríguez-Pose & Fitjar, 2013). This new knowledge could come in the form of informal information exchanges, international collaboration projects, supplier-customer links, or new firm arrivals (whether headquarters or branch plants). Whatever the form, the knowledge brought through these ‘weak ties’ can renovate the regional knowledge base, opening the door to more innovations and business opportunities than the ones developed by resorting in regional stakeholders’ knowledge (Boschma, 2005; Boschma and Iammarino, 2009). In turn, these ‘weak ties’ could help connecting Twente to the neighbouring German regions.

In order to highlight ways in which the Twente Board can better manage the region's networks and realise the advantages advanced here, the next chapter will propose further examples.

### 5. Best Practice Examples

#### 5.1. Best Practice Example I: Problem-Based Learning, Aalborg University<sup>2</sup>

The UT is already developing projects based on problem-based learning (PBL); but more resources could be devoted to the further development and promotion of this teaching style, learning from the doings of PBL in Aalborg University (Denmark). There, 53.1% of the master theses were written in collaboration with businesses and other organisations in 2016. Students learn to combine theoretical and practical knowledge in the solution of real-life problems at firms and other organisations, often involving work-placements. As a result, students' employability increases, and firms can apply university knowledge without having to engage in long-term projects, thanks to the short time span of student projects. Not just large businesses seem to benefit from this route to industry-university collaboration, but also SMEs. SUA runs a similar programme called Fast Forward, involving traineeships in multiple companies and other organisations along two years (Garlick *et al.*, 2006, p. 24; Saxion, n.d.).

12

The short-term frame of PBL projects also means that it is a less costly route to industry-university collaboration than, say, partnership agreements (Perkmann & Walsh, 2007). Considering that SMEs and traditional businesses might have neither the time nor the inclination to engage in long-term collaborations with universities, programmes like PBL or Fast Forward can provide an entry port for Twente (traditional) SMEs to access university expertise. In the long run, this entry port might stimulate the interest of these businesses in more ambitious projects with the UT and SUA, either because of the success of the trainee projects or because of trainees' connections with university departments (Drejer & Østergaard, 2017).

This latter point is of particular interest regarding the reach of the Twente networks in (traditional) SMEs: The Twente Board could use this opportunity to stimulate the creation of networks between the regional higher education institutions and traditional SMEs. Indirectly, these networks could support the formation of 'weak ties' connecting the Twente Board with this type of firms which, as regional stakeholders might have not felt well enough represented in the past. For example, by increasing the frequency of PBL/Fast Forward type

---

<sup>2</sup> Aalborg University, 2016, p. 44; Gregersen et al., 2009, p. 154; Kendrup, 2006, p. 19

programmes, higher education institutions could become more conscious about the concerns of traditional SMEs, bringing in turn these concerns to the Twente Board.

New developments on PBL can also be found in the Ingenuous platform, developed by the University of Twente, the University of Aveiro (Portugal), the University of Linköping (Sweden) and the University of Stavanger (Norway). In the platform, which started in 2018, students, university staff, business actors, governments and society actors come together to propose and develop solutions to regional and industrial challenges, using the university as meeting platform and enhancing coordination among regional stakeholders. However, due to the novelty of this approach, its utility and effectiveness are still to be evaluated.

### 5.2. Best Practice Example II: the Mjärdevi Student Board<sup>3</sup>

Since 2012, Science Park Mjärdevi in Linköping (Sweden) has been choosing a shadow board composed of students from Linköping University each year. The idea behind this practice is to encourage students from the university to stay in the region, especially to work in Science Park Mjärdevi, after their graduation. The idea is also to get advice and ideas from the students that know more about their own expectations and the channels to use to reach students' audience than the traditional members of the Science Park Board, who on average belong to an older generation. The shadow board is composed of eight students from the university for a mandate of one year to two years. Half of the members' mandate is renewed every year to ensure continuity. The selection of the students is done to ensure that as many disciplines, faculties and nationalities are represented in the group, as well as to respect gender equality.

13

Concretely, the Mjärdevi Student Board suggest ideas to the official Board, reflects upon the strategic issues discussed by the Board, and takes part in an annual meeting on strategy. Students from this shadow board are both ambassadors of the Science Park at the University and of the University in the Science Park. They benefit from a professional experience however; their service is not credited with ECTS.

A similar student body could help the Twente Board in its goal of improving the coordination of the regional networks whilst helping to extend the Twente Board networks to less well represented stakeholders. By including student representatives (either as shadow boards in the UT and SUA, or as a student board attached to the Twente Board), the Twente Board could better identify overlaps and gaps in its networks, and which stakeholders need more urgent actions. In addition, including student voices also means that the Twente Board

---

<sup>3</sup> Cadarin et al., 2017

networks can cover less powerful, but nevertheless relevant societal stakeholders, like the youth and their neighbourhoods.

### 5.3. Best Practice Example III: RETA Network Coordination<sup>4</sup>

RETA (*Red de Espacios Tecnológicos de Andalucía*) was a non-profit organization established in 2005 to oversee the smooth functioning of the regional innovation system. Its main mission was firstly, to improve the relationship between universities, research organizations, technology parks, technology centres and business innovation centres. Secondly, to link small traditional businesses in rural areas to innovation and R&D opportunities available to their counterparts in the science parks. RETA realized this mission by training and deploying 85 innovation agents. These so-called innovation agents were attached to entities both in the urban and rural areas. Their role was to assess the innovation needs of traditional firms and guide them to access government support such as small-scale innovation vouchers. In addition, they also trained small businesses and rural-based ventures in the use of simple ICT solutions. Furthermore, they helped firms to develop research teams to apply for R&D projects.

The Twente Board could perform a similar role but in a modified manner. Given the resource constraints facing the board, it would be difficult to employ people as innovation agents. However, it can leverage the skills of students at UT and SUA to achieve this objective. The Board could liaise with the HEIs and their technology transfer offices to recruit interns and train them for this purpose. Considering the paucity of information on businesses in the traditional sectors and rural areas, there is the need to compile database of firms in the region. The primary task of the interns would be to conduct a comprehensive innovation need assessment of the firms. This would help the board to design targeted interventions for all businesses and not only those in the high-tech sector. In addition, it would also help in getting people with the right expertise from the HEIs to solve specific challenges facing these businesses.

14

## 6. Recommendations

In sum, we propose a series of recommendations aimed at strengthening the role of the Twente Board as a body capable to develop the potential for innovation and development that the region's networks can deliver.

---

<sup>4</sup> Marchese & Potter, 2011, p. 40, 182; Pinto et al., 2015, p. 1878



Firstly, the **Twente Board** should lead an analysis of the regional networks to see whether the current structure of networks is still the most efficient to meet the region's needs.

Secondly, this knowledge would enable the next recommendation, that the Twente Board should **coordinate and empower the regional stakeholders**, by **paying attention to which stakeholders are included in the Board's discussions, striving for the inclusion of all relevant partners including citizens**. A way to make this task easier could entail establishing local networking boards, with local stakeholders such as policymakers, business people, and higher education representatives, with each head being a representative in the Twente Board.

Thirdly, the **Twente Board** should reflect upon its representativeness in the region. Ways to stimulate this reflection could involve: i) **choosing 'organisational boundary spanners'** (e.g. individuals that can facilitate the circulation of information among organisations) **to smoothen the functioning of the regional Triple Helix innovation system;** ii) a **careful selection of the individuals that should take part in the debates, in order to stimulate a smooth and inclusive discussion in each topic and fora.**

Fourthly, and in relation to the previous recommendation, **the composition of the Twente Board should be optimized**, considering **which sub-units or practical divisions are most appropriate so that more projects are developed**. In order to **support and complement this process, the Board should be able to hire more support staff.**

Finally, **the best practices portrayed in the previous chapter could be considered and adapted to the Twente context.** This could entail:

- Strengthening the application of PBL in regional higher education institutions;
- Implementing a shadow board attached to the Twente Board;
- Establishing, with the collaboration of the HEI's, a network of liaison officers connecting the needs of traditional SMEs to the resources that regional stakeholders can provide.



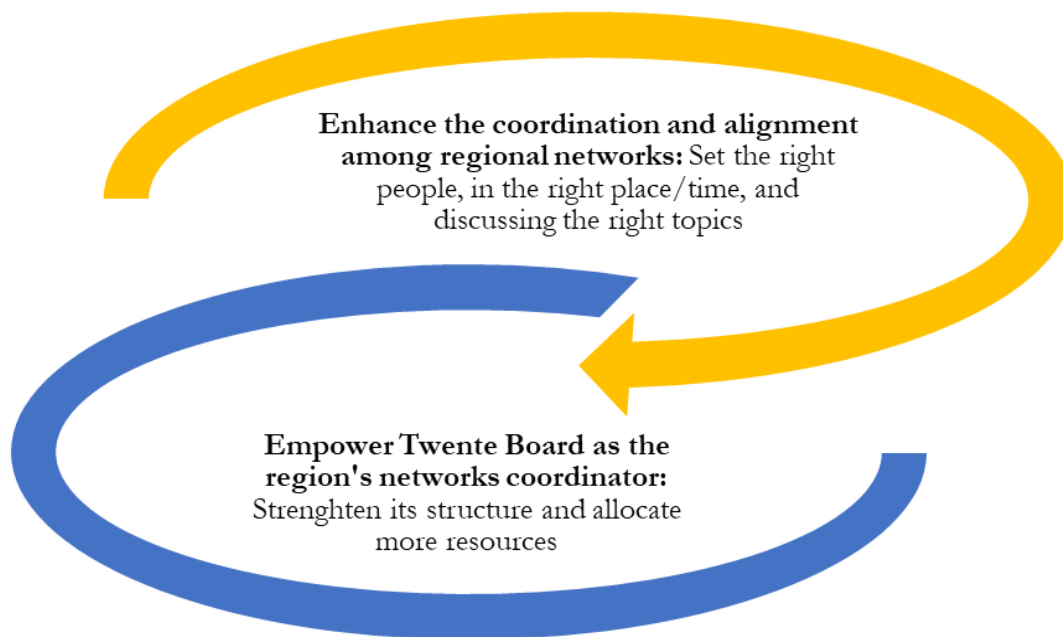


Figure 2 - Top Recommendations

## 7. References

- Aalborg University. (2016). *Årsrapport 2016*. Retrieved from: <http://www.e-pages.dk/aalborguniversitet/518/html5>
- Boschma, R. (2005). Proximity and Innovation: A Critical Assessment. *Regional Studies*, 39, 61–74. DOI: <https://doi.org/10.1080/0034340052000320887>
- Boschma, R., Iammarino, S. (2009). Related variety, trade linkages, and regional growth in Italy. *Economic Geography*, 85, 289–311. DOI: <https://doi.org/10.1111/j.1944-8287.2009.01034.x>
- Cadorin, E., Johansson, S. G., & Klofsten, M. (2017). Future developments for science parks: Attracting and developing talent. *Industry and Higher Education*, 31(3), 156-167.
- Charles, D. (2006). Universities as key knowledge infrastructures in regional innovation systems. *Innovation: The European Journal of Social Science Research*, 19(1), 117-130.
- Cooke, P., Uranga, M. G., & Etxebarria, G. (1997). Regional innovation systems: Institutional and organizational dimensions. *Research Policy*, 26, 475-491.
- Drejer, I., Østergaard, C. R. (2017). Exploring determinants of firms' collaboration with specific universities: Employee-driven relations and geographical proximity. *Regional Studies*, 51, 1192–1205. DOI: <https://doi.org/10.1080/00343404.2017.1281389>
- Etzkowitz, H., & Leydesdorff, L. A. (1997). *Universities and the Global Knowledge Economy: A Triple Helix of University-industry-government Relations*. London, England: Pinter.
- Etzkowitz, H. (2003). Innovation in innovation: The triple helix of university-industry-government relations. *Social science information*, 42(3), 293-337.

- Fitjar, R. D., Rodríguez-Pose, A. (2011). When local interaction does not suffice: Sources of firm innovation in urban Norway. *Environment and Planning A: Economy and Space*, 43, 1248–1267. DOI: <https://doi.org/10.1068/a43516>
- Granovetter, M. (1973). The Strength of Weak Ties. *American Journal of Sociology*, 78, 1360–1380. DOI: <https://doi.org/10.1086/225469>
- Garlick, S., Benneworth, P., Puukka, J., & Vaessen, P. (2006). *Supporting the Contribution of Higher Education Institutions to Regional Development*. Peer Review Report: Twente in the Netherlands. OECD.
- Gregersen, B., Linde, L. T., Rasmussen, J.G. (2009). Linking between Danish universities and society. *Science and Public Policy*, 36, 151–156. DOI: <https://doi.org/10.3152/030234209X406818>
- Groenleer, M., Stam, E., Tordoir, P., Verba, M., Broekman, C., & Ponds, R. (2018). *Differentiatie in regionale governance en de relatie met economische groei en ontwikkeling. Amsterdam/Tilburg/Utrecht*. (Onderzoek in opdracht van het Ministerie van Binnenlandse Zaken en Koninkrijksrelaties).
- Grossman, G. M., & Helpman, E. (1991). Trade, Knowledge Spillovers and Growth. *European Economic Review*, 35(2-3), 517-526.
- Kendrup, S. (2006). *OECD / IMHE project Supporting the Contribution of Higher Education Institutions to Regional Development*. Subreport: Aalborg University Jutland-Funen, Denmark. OECD / IMHE.
- Kirzner, I. M. (1997). Entrepreneurial Discovery and the Competitive Market Process: An Austrian Approach. *Journal of Economic Literature*, 35(1), 60-85
- Kreiner, K., & Schultz, M. (1993). Informal Collaboration in R&D: The Formation of Networks across Organizations. *Organization Studies*, 14(2), 189-209.
- Laredo, P. (2007). Revisiting the Third Mission of Universities: Toward a Renewed Categorization of University Activities? *Higher Education Policy*, 20(4), 441–456.
- Lundvall, B. Å. (1992). *National Systems of Innovation: Towards a Theory of Innovation and Interactive Learning*. London, England: Pinter Publishers.
- Marchese, M. and J. Potter (2011), “Entrepreneurship, SMEs and Local Development in Andalusia, Spain”, *OECD Local Economic and Employment Development (LEED) Working Papers*, 2011/03, OECD Publishing, Paris. DOI: <http://dx.doi.org/10.1787/5kgdt917nvs5-en>
- Mccann, P., & Ortega-Argiles, R. (2015). Smart Specialization, Regional Growth and Applications to European Union Cohesion Policy. *Regional Studies*, 49(8), 1291-1302.
- Nelson, R. R. (1993). *National Innovation Systems: A Comparative Analysis*. Oxford, England: Oxford University Press.
- Perkmann, M., & Walsh, K. (2007). University–industry relationships and open innovation: Towards a research agenda. *International Journal of Management Reviews*, 9(4), 259-280.

- Pinto, H., Fernandez-Esquinas, M., & Uyarra, E. (2015). Universities and knowledge-intensive business services (KIBS) as sources of knowledge for innovative firms in peripheral regions. *Regional Studies*, 49(11), 1873-1891.
- Rodríguez-Pose, A., Fitjar, R. D. (2013). Buzz, Archipelago Economies and the Future of Intermediate and Peripheral Areas in a Spiky World. *European Planning Studies*, 21, 355–372. DOI: <https://doi.org/10.1080/09654313.2012.716246>
- Stam, E., Romme, A. G. L., Roso, M., van den Toren, J. P., & van der Starre, B. T. (2016). *Knowledge triangles in the Netherlands: an entrepreneurial ecosystem approach*. Paris: OECD.

# Higher Education and the Development of the Twente Board

## Contents

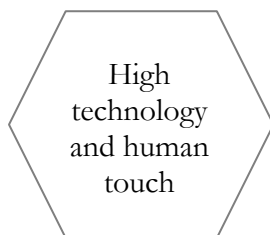
1. Background: A Puzzle for the Twente Board.....	19
2. Problem Statement.....	20
3. Analysis .....	21
3.1. System level .....	21
3.2. Institutional level .....	25
3.3. Individual level.....	29
4. Best Practices .....	32
5. Recommendations.....	35
6. References.....	37

## 1. Background: A Puzzle for the Twente Board

Twente is a region in the Eastern Netherlands that has gone through some reinvention in the last few decades. Previously with its economy based primarily in the textile industry, upon its decline in the mid-20<sup>th</sup> century Twente sought to attract highly technological institutes and reorient its economic strategy. At present, Twente positions itself as a characteristically entrepreneurial and innovative region. Its economy is based on small and medium-sized enterprises with a significant concentration in the sector of high-tech systems and materials.

19

Concomitantly, the region faces several challenges in asserting itself both nationally and internationally. Most notably, a high unemployment rate and a weak labour market cohesion; competition with other Dutch regions in core sectors; and internationalization and attraction of talent figure among the key issues. Three problematics stand out in the region:



High-tech rebranding seems contradictory in a region that still encompasses a large rural area. It poses the question this may come at the exclusion of other relevant industries and fields (e.g. humanities). Similarly, in matters of place-building and identity creation, this is more difficult to achieve in a highly mechanical and streamlined environment.



The modes of linking and organising the great variety of actors present in the region is quite complex, with multiple networks coexisting. This leads to overlapping, increasing muddling of functions and dilution of goals.

Education institutions have revitalised the region of Twente, namely research institutes such as the University of Twente and Saxion. Nonetheless, their engagement with the region, and the applicability of their research and curriculum to regional needs is still questioned.

A relevant body in the region seeking to address these issues is the Twente Board, which includes members from the so-called Triple Helix of government, the business sector and research institutions. With the aim of strengthening the region's economy, the Board has led the planning of two agendas for the region's development.

At the Board's request, this policy brief will approach the third major topic described above: of how, in the context of design of an agenda for the development of the Twente region (Agenda voor Twente), the Twente Board should consider the role of Higher Education (HE).

20

## 2. Problem Statement

This section (of the brief) focuses specifically on the Higher Education (HE) sector and the Twente Board in the Region of Twente, which are mainly connected through the Twente Agenda (Agenda voor Twente).

A number of higher education institutions (HEIs) can be found in the region: the University of Twente (UT), the University of Applied Sciences Saxion and AKI ArtEZ Academy for Art & Design. Given certain restrictions in the elaboration of this policy brief, we will focus on the first two. While not developing the case of ArtEZ figures as a limitation in our work, further analysis of the UT and Saxion cases, institutions of a broader academic scope, will enable additional inference on their relationship with the region, the Twente Agenda and the Twente Board.

The Twente Board serves as the economic advisory body of the region and seeks to work 'towards a shared economic agenda'. The 2018-2022 Agenda voor Twente is focused on technique, business environment, labour and sustainability as key to the region's economic development.

While HEIs are projected to be important for the development of their economic, social and cultural surroundings (Arbo and Benneworth, 2007; Christopherson and Clark, 2010), the specific role of the HEIs in their region's development is reportedly neither fully understood nor explored. Further, the possible role of the Twente board in stimulating the contributions of HEIs is yet to be properly defined. For instance, the Twente Board could advocate for goals on the Twente Agenda that explore and support HEIs' contribution to the region.

Drawing on both secondary and primary data, and citing exemplary practices from other regions, we seek to answer the following questions and subsequently propose recommendations that explore the combined potential of the above-mentioned institutions.

1. How does the Twente Agenda address the role of HEIs in achieving its goals, and how can this be improved?
2. How is the HE sector in the region contributing to the Agenda goals of the region and what more can be done?
3. What mediatory role should be assumed by the Twente Board in unearthing the potential of the HEIs in the region?

21

We project that properly defining an intermediary role for the Twente board, one that influences HEI-specific goals on the Twente Agenda, is key to better utilising the region's socio-economic potential for its balanced development.

### 3. Analysis

Considering the problem statement, we would like to divide our analysis into three levels:

- **System level:** How are governmental policies defining impact?
- **Institutional level:** What are UT and Saxion's strategies regarding impact?
- **Individual level:** How are individual researchers defining impact?

Zooming into these distinct layers, will allow us to identify the underlying causes specific for each level that can be addressed to increase the impact of higher education for the Twente region.

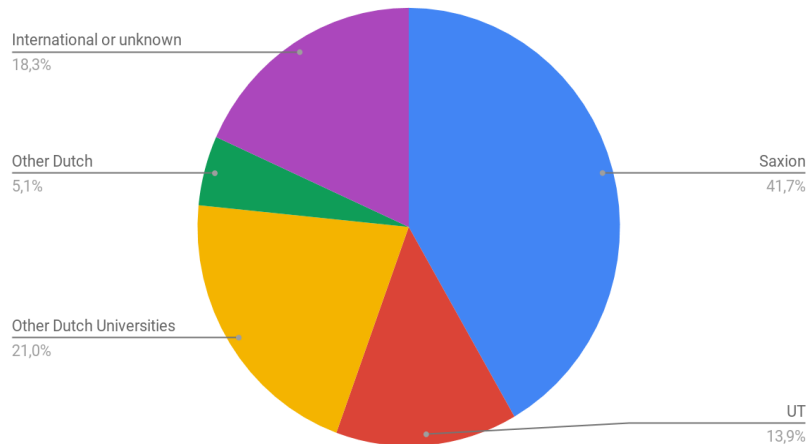
#### 3.1. System level

##### Defining the system level for the research of UT and Saxion

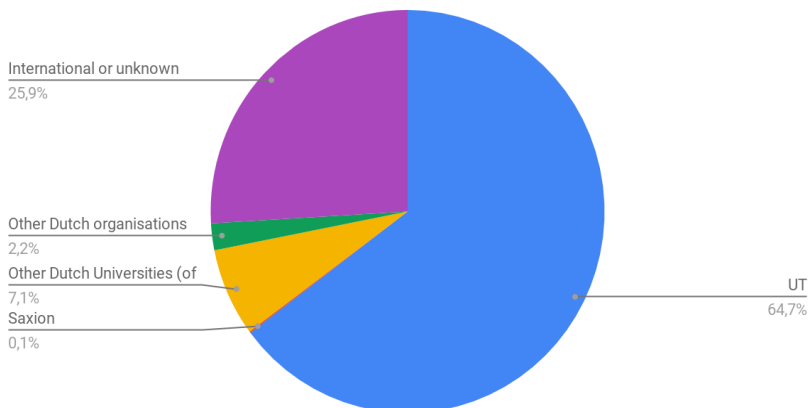
A review of the scientific publications of the two major HEIs in the region provides us some interesting insights in the area in which both organisations are conducting their research. Saxion collaborates for most of its publications with other institutions, and the main research

partner is the UT. Furthermore, the ties to other universities (of applied sciences) in the Netherlands play an important role in the scientific production of Saxion. Other collaborations involve other organisations in the country (e.g. research centres and companies), and a sizable share of foreign co-authors.

Author Affiliations of Saxion's publications\* (n=425)



Author Affiliations of UT's publications\* (N=38433)



**Figures 1 and 2. Author affiliation of publications of Saxion and University of Twente (own compilation based on Elsevier Scopus. Fractional counting of publications is applied; For more context see: [www.leidenranking.com/information/indicators](http://www.leidenranking.com/information/indicators)).**

The publication profile of UT shows a smaller dependence on collaboration. While the university is the most important collaboration partner for Saxion, the inversely this is not the case. Also, the role of other Dutch universities or organisations is less significant, with more prominence in the share of international collaborations.



Defining the system level for impact, it is not only dependent on with whom the universities collaborate, but more importantly who funds the research. From the funding information available in the scientific publications we can observe a major role for the Dutch national government as research funder for both organisations. The Dutch Scientific Funding Council NWO is the most important governmental funding agency, but also other bodies such as the Ministry of Economic Affairs, are frequently providing financial support for university research. Furthermore, two foreign funding bodies from the UK and USA are listed, which most likely provide funds to international co-authors. When comparing the funding sources of both organisations, we could state that the research funding of Saxion has a more local character, with the Province of Overijssel playing a prominent role; while on the other hand, the UT depends more on European funding.

Rank	Saxion's research funders	Rank	University of Twente's research funders
1	NWO	1	NWO
2	National institute of health (USA)	2	EU
3	Saxion	3	Ministry of Economic affairs
4	Province Overijssel	4	EPSRC (UK)
5	Ministry of economic affairs	5	University of Twente

**Table 1. Funding of scientific research (own compilation based on Thomson Reuters Web-of-Science).**

The above observations point to a very prominent role of the national and European/international levels, and therefore we need to assess how impact is defined there as well.

### National level

The Dutch National Research agenda is a strategic document outlining the direction of research at the national level. This agenda is written based on a broad public consultation and identifies various challenges in the fields in which Dutch researchers are likely to excel, and which can further the interests of society and boost the Dutch knowledge economy. For the execution of this agenda, researchers, businesses, authorities, and civil society are asked to join forces by participating in funding and valorising research. The fields identified are quite broad and every scientific discipline is, to some extent, represented within the agenda. However, the definition of these priority areas is not necessarily focused on realizing national or even regional impact, but rather on attaining national excellence to achieve international impact with Dutch science.

### European level

European policy recognizes the importance of HEIs for the regions where they are embedded. The Renewed EU Agenda for HE (2017) identifies four key problematic areas as follows: the poor match between graduates' skills and the needs of modern society, poor contribution of the HE sector to the regional society, insufficient input of HE to innovation at the places where they are located, as well as inappropriate organization and funding of HE systems that does not allow them to function accordingly. The first 3 issues clearly resonate with some of the Action lines of the Agenda voor Twente 2018-2022 on reducing the gap in skills needed by the regional labour market and the skills supplied by the educational sector and stimulating innovation and entrepreneurship in the field of technology.



The main instrument to steer the change in the problematic areas mentioned above is by providing monetary incentives for its implementation. By making Smart Specialisation Strategies (S3) an essential requirement for European Structural and Investment Funding (ESIF) European Council wants to stress an active involvement of HEIs in regional development alongside their potential societal partners. Since S3 focus on “regional investment and effort on innovation in sectors with high growth potential”, HEIs are expected to serve as mediating bodies to connect academics, entrepreneurs and public authorities, as well as “align their educational offer to needs identified in S3, seize opportunities for innovation in priority sectors, and help local businesses and other organisations understand and adopt new ways of thinking”.

24

Being a part of East Netherlands (Overijssel province), Twente region takes part in the regional innovation strategy known as ‘The Smart Specialisation Strategy East Netherlands’ that has four priority sectors: Agro-food, Health, High-tech systems and Materials (HTSM) and Energy and Environmental technology/Biobased economy (EMT).

According to the ECIU (2015) report, UT maintains the strategic collaboration with its regional partners at top management and staff levels, and develops joint projects, e.g. technology transfer offices, networks and clusters. The European Regional Development Fund (ERDF), that operates under ESIF, covers several projects like TechMed Living Lab, Novel-T, High-Tech Knowledge Transfer project, among others. Nonetheless, the major technical universities and policies on bringing academy and industry closer, the Overijssel province alongside with the Twente region still underperforms in comparison with the

national average in the regional innovation index 2017 (European Commission, 2018; van Herwaarden, 2017).

Another funding instrument at the European level is a framework programme Horizon2020 that focuses on achieving excellent science, industrial leadership and tackling societal challenges at a European level. These societal challenges range from 'Health, demographic change and wellbeing' to 'Smart, Green and Integrated Transport' and tend to have a strong emphasis on the natural sciences. The specialisation of the university should allow them to provide solutions to these challenges.

### Problem at the system level: focus on global societal challenges

The relevant strategies at the institutional level have a very specific focus on the global and national societal challenges we are facing. In the highly competitive academic landscape, universities increasingly need to compete for research grants, and therefore to align their research objectives to a certain extent with these global and national challenges. This need to contribute to impact at multiple levels, can hinder the regional engagement.

25

## 3.2. Institutional level

### University of Twente

The UT strategic plan, UT Vision2020, has a dual nature: it incorporates both corporate and change visions (Kotter, 2011). In the corporate part, a direction is elaborated which the university needs to focus on and a fundamental dimension on which it will prosper; whereas in the change vision they show a picture of where the university will be after the implemented changes so that it will be able to exploit bigger opportunities provided by the external environment.



The red line of the strategy is strengthening the university's entrepreneurial spirit and pushing it further at the international level, though a brief allusion is made regarding the UT stance towards the Twente region. The strategy's defined priority is tackling the Grand Challenges in the areas where the university excels, e.g. technology (ICT, nanotechnology, Biomedical engineering, etc.), engineering and social development. As one of the largest employers in the Twente region, the UT recognizes the importance of collaboration with societal partners like its alumni, industry and governmental bodies.

Though the connection of UT and the region in the university's strategic plan is rather superficial, the president of the Executive Board, Victor van der Chijs, sees the strength of the university and its drive to become a prominent HEI at the international level as the key to unlock regional potential:

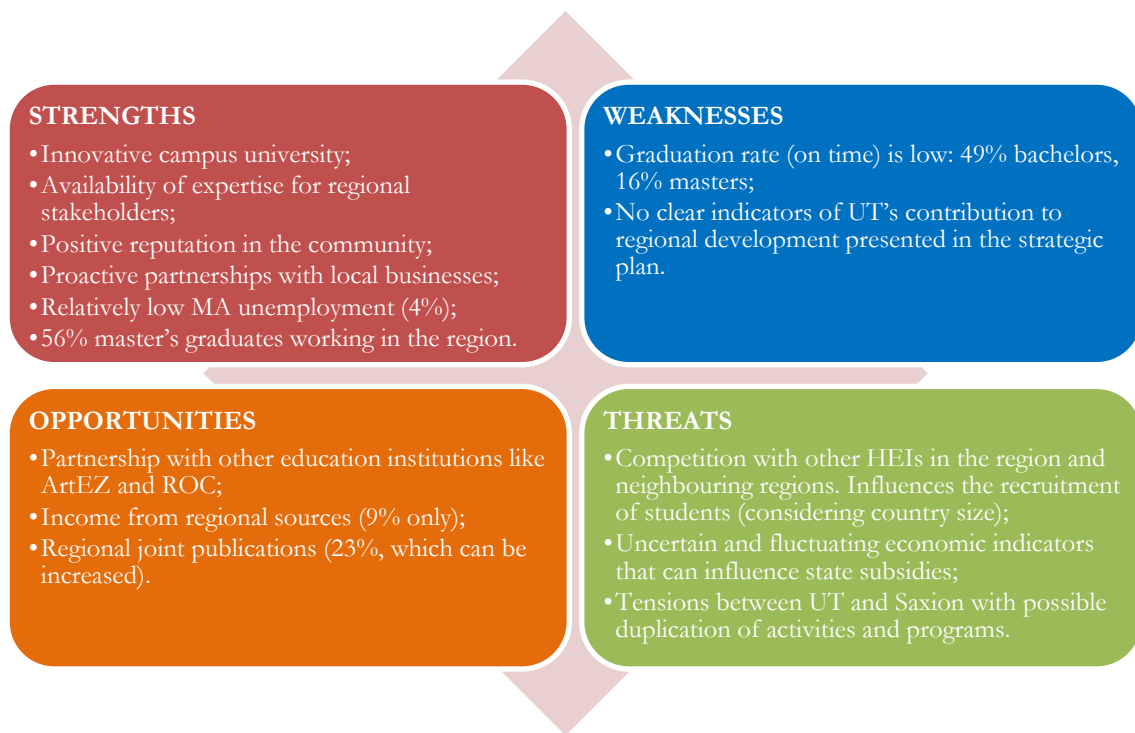
*"The combination of academic excellence, an entrepreneurial attitude and an international orientation will make our social impact greater than ever by 2020. More than ever before, we will function as a partner in the region, boosting regional innovation."*

In addition to that, EC also considers UT as a strong regional player and a reliable partner for other HEIs in the region. From their perspective, UT supports local business community and public policy as well as their focus on nanotechnology and high-tech. Alongside with Saxion University of Applied Sciences and local businesses, UT has created on opportune ground in the form of open innovation centres for addressing the challenges of the region (European Commission, 2018).

Matching the Agenda voor Twente and the UT Vision2020, there are several similar lines along which both documents are designed:

- Both have a clear national and international outlook;
- In both strategic plans, they highlight the importance of the international network for solving the regional issues;
- They recognise the importance of all regional stakeholders (municipalities, educational institutions, research institutes, businesses, etc.);
- Both stand for having the adequately trained future workforce;
- Both see the importance to recognize and retain talent in the region;
- Both advocate for cultivating the entrepreneurial spirit.

To understand how UT sees its future contribution into the Twente region, below is a SWOT analysis of the UT Vision2020. Towards broadening the picture of the contribution, facts and figures related to the current situation report to information available on the UT website, UMultirank university ranking system, and THE world university ranking.



Other than that, UT is taking measures to contribute to the societal development of the Twente region in various forms. Apart from providing consultancies to businesses and industries as well as public organisations, and entering knowledge transfer partnerships, UT is making a transformational impact via founding research and technology centres like NanoLab, DesignLab and TechMed.

### Saxion University of Applied Sciences

Like UT, Saxion has its own strategic plan that explains how the university sees itself in the short-term perspective. In the Saxion strategic plan 2016-2020, there are five key strategic lines:

- Excellent teaching;
- Inspiring teaching staff;
- Applied research and its added value;
- Living Technology and vital organization.

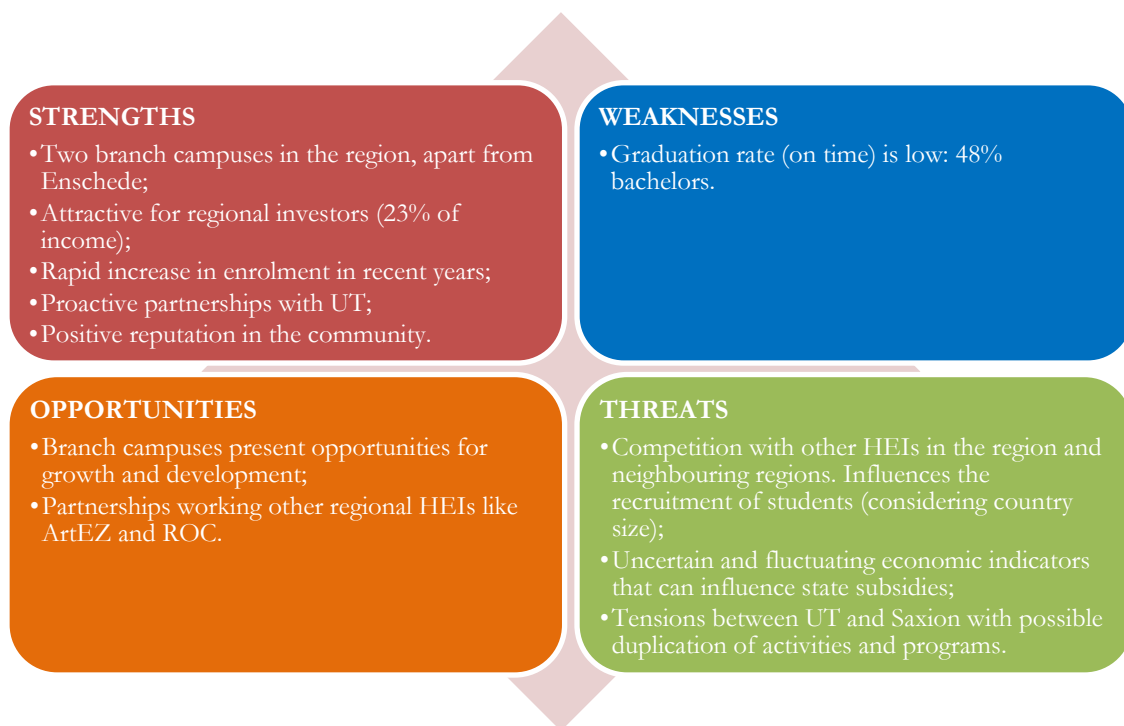
The bet is mainly made on educating a quality human capital with some admixture of applied research. A special focus is given to the Living Technology that is defined as an interaction between technology and society. The definition itself has a very direct social inclination. When it comes to vital organisation, the strategy explains it as improvement of the organizational structure and culture, as well as its quality and processes. The strategic plan is rounded up with

a very brief outline of strategic indicators to show the measurability of certain areas, like teaching, research and employee satisfaction. In general, the strategy expresses an ambition to cater to societal needs at regional, national and international levels, though, the equilibrium seems to be shifted more to the national and international levels. Nonetheless, the university sees itself as contributing to regional development by participating in Knowledge Park Twente research, and advancing regional innovation agendas alongside with UT.

Regarding the Agenda voor Twente 2018-2022, the Saxion strategic plan has a few similar narrative strands:

- Mutual recognition of the same partners (including one another) to advance their strategic positioning in the region;
- Both see the necessity to suffice the demand of the (local) labour market with appropriately certified human capital;
- Start-ups are considered an opportune base for developing joint research projects to propel innovative ideas and bring them to the market.

When making the SWOT analysis for the Saxion strategic plan, like with the UT Vision 2020, we mainly focused on the way the university sees its future contribution to the surrounding society and Twente region. The SWOT analysis is enriched with information published on the university's website and UMultirank university ranking system.



By and large, Saxion has implemented an interesting concept that they use for showing their proximity to the surrounding society - Living Technology. It is embedded in both their research and teaching activities. Like their neighbouring HEI, UT, Saxion has several research groups and centres that are driven by demands of local authorities, businesses and other organisations.

**Problem at the institutional level: UT focus on international research and education**

Although UT and Saxion both share their focus on technology, it seems that Saxion is more embedded in the region, due to a more applied character of research and educational programmes that aim to cater to local businesses.

### 3.3. Individual level

Engagement with the Twente region and with society in a broader sense, while influenced and shaped by systemic and institutional arrangements is, nonetheless, dependent on individual motivations and professional constraints and responsibilities. As shown in the diagram below delineated by Charles (2018) on the topic of universities' public engagement activities, multiple organisations influence the operationalisation of external engagement in a HEI, such as government departments, funding councils or other types of partners. These bodies and the organisation of the HEI itself structure and manage the forms of engagement. Nonetheless, those conducting and shaping these activities are ultimately the individuals that are a part of the HEI, namely academics, students and staff.

29

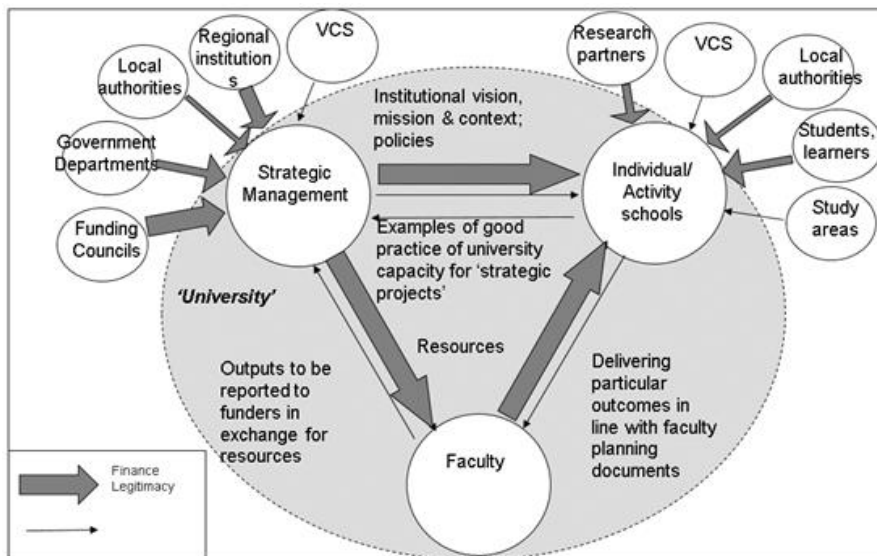


Figure 3 - Diagram illustrating the layers of influence and legitimacy involved in HEI (public) engagement. Source: Charles (2018).



Both UT and Saxion have made efforts in their organizational structure and strategic management towards creating spaces and channels for engagement to take place between university staff and broader society. In UT, examples of such spaces include the Science Shop, the Design Lab and the Living Smart Campus that potentially enables some degree of interactivity with the outside. On the other hand, Saxion's engagement profile and structure seems more focused on internships and industry placements for its students and staff. To establish continued links between former staff and students, and thus strengthening inter-institutional cooperation, both universities have also tried to develop alumni networks, though from a basic analysis of each one's website, Twente appears to have a more developed platform.

These examples were mentioned by interviewees from both HEIs and other relevant regional bodies, and by participants in the think tank organised by UT on "Reconnecting the UT to the Twente Region". However, while considered as facilitators of engagement, the above instruments were deemed insufficient while organisational incentives are not adequately operationalised to motivate students and staff.

The capacity of HEI's student body and staff to engage with the 'outside world' was regarded as mainly limited by matters of **time**, **resources** and **incentives**, and/or **knowledge** of existent channels for engagement, or of the most effective ways to do so.

30



**Time:** With defined minimum requirements and deliverables for teaching and research, regional engagement often requires staff to go the "extra mile" and relinquish some of their personal time. Schedule flexibility and individual tailoring according to each academic's strengths could thus greatly contribute for a more dynamic and engaged academic community.

**Resources and Incentives:** Availability of spaces, funding and facilities for the realization of engagement activities is a necessary consideration for staff and students, and not merely the responsibility of HEIs, but of other local/regional/national bodies. While these may affect entire faculties, it is necessary as well to consider the limitations of the current system of merit and reward, highly bureaucratized and focused on quantitative evaluation.



**Knowledge:** While the instruments and spaces need to be in place to facilitate the process, awareness of how to engage and the best channels for doing so are needed. Incentivising effective communication of existing opportunities, as well as providing and promoting training in these activities, should be a priority.

These constraints are present in both Saxion and UT and are in fact common to the wider academic community. Interviewees and participants in the think tank emphasized the untapped potential of individuals, in the academic community and beyond, with a need to:

- Increase the visibility of engagement champions, or boundary-spanning actors;
- Leverage actors' social capital, formal and informal networks and existing platforms of collaboration (e.g. alumni; intersectoral roles in interacting organisations).

This has the potential to benefit from individuals' interests and motivations and, in considering the value of socialisation, to contribute to the formation of communities of practice (Charles, 2018) in regional engagement, i.e. groups that share a jointly constructed and continuously shaped identity and practice.

According to Hughes & Kitson's (2012) study on the different orientations or pathways academics can take regarding external engagement, four major categories stand out, with a few examples of what they might include below:

People-based activities	Community-based activities	Commercialisation activities	Problem-solving activities
<ul style="list-style-type: none"><li>- Giving invited lectures;</li><li>- Attending conferences;</li><li>- Student placements;</li><li>- Sitting on advisory boards.</li></ul>	<ul style="list-style-type: none"><li>- Lectures for the community;</li><li>- Public exhibitions;</li><li>- Schools projects;</li><li>- Community-based sports.</li></ul>	<ul style="list-style-type: none"><li>- Licensed research;</li><li>- Patenting;</li><li>- Spin-out company;</li><li>- Formed/run consultancy.</li></ul>	<ul style="list-style-type: none"><li>- Joint publications and/or research;</li><li>- External secondment;</li><li>- Hosting personnel;</li><li>- Informal advice.</li></ul>

31

When attempting to develop and strengthen their engagement profile and collaborate with their region, HEI's should thus consider engagement in all its facets and avoid a narrowed and oftentimes constricting conceptualization and operationalization that prioritises commercialization activities. This would not only contribute towards leveraging each individual's skills and interests but would also make the HEIs more open to the participation and involvement of a more diverse array of actors from society.

**Problem at the individual level: narrow definition of engagement**

Both HEIs are implementing engagement mechanisms but these are limited in scope, thus influencing their staff's interest in collaborating with the outside. There is a need to broaden the definition of regional engagement, while providing the flexibility and incentives necessary for staff to follow their interests with motivation.

### 4. Best Practices

The previous section has identified several underlying problems which might hamper the engagement of HEIs with the Twente region. In this section, we will show several practices that are implemented across various European regions grappling with similar issues. We present these cases to provide inspiration for modifying existing approaches and introducing new ones, keeping in mind that the transplantation of best practices from one place to another is limited by local contingencies, such as national policy frameworks, the configuration of regional innovation coalitions, organisational cultures, or the specific assets of the territory (Hospers, 2006; Walendowski et al., 2010). Examples include the UT drawing inspiration from the Aalborg University model for problem-based learning (PBL), the University Innovation Fellows (UIF) program at Stanford University, and the Ingenious platform.

32

#### 4.1. Aalborg problem-based learning model

The problem-based educational model was adopted by Aalborg University to provide access to highly skilled employees and expert knowledge for companies in North Denmark, and thus revitalise the region. With time, it has gained international recognition and has been adapted by other universities, including UT, that introduced a university-wide project-based Twente Educational Model (Twents Onderwijs Model, TOM) in 2014.

In the problem-based learning method, project work is aimed at applying the acquired knowledge to a practical problem, most times by reaching out to local companies and public actors to help them solve it. In this way, academic knowledge becomes more societally relevant, while students become more embedded and employable in the region.

However, the practical implementation of the PBL method that would bring benefits to the region requires both a corresponding strategic orientation of the university and a stakeholder base that is open to host and participate in student projects. While for AAU, the PBL model was part of its DNA from the beginning, the UT went through a fundamental transformation of undergraduate programmes and created a combination of the model's basic principles with a local tradition. The following table contrasts the basics, also embraced by the UT, with the adaptation linked to the university profile.

AAU PBL	UT TOM
<ul style="list-style-type: none"><li>• Societally relevant problems;</li><li>• Interdisciplinary solutions;</li><li>• Project organisation;</li><li>• Combination of obligatory and optional courses;</li><li>• Student group work;</li><li>• Cooperation with external partners;</li><li>• Transferable competences and learning outcomes;</li><li>• Student responsibility for learning;</li><li>• Organisation of physical spaces for PBL;</li><li>• Continuous development of the model.</li></ul>	<ul style="list-style-type: none"><li>• Modular curriculum;</li><li>• Variation in teaching methods;</li><li>• Three student roles: researcher, designer, organizer;</li><li>• Combination of perspectives from sciences and social sciences;</li><li>• Emphasis on entrepreneurship;</li><li>• Considerations of efficiency (quick and correct fit between students and study programmes, dropout prevention, and time to degree).</li></ul>

Unlike in the AAU case, the curricular reform at UT was driven primarily by considerations of educational quality and by performance pressures from the Dutch government. TOM reflects the traditional assets of the university (research, entrepreneurship) and its new directions (design thinking), but nowhere does it mention aspirations of regional relevance. As a result, despite a project-based organisation of learning, students transferring from Saxion to UT point to a greater divorcement of the latter from its immediate environment.

Could the Twente Board facilitate a better integration between TOM and the needs of region?

### 4.2. University innovation fellows

University Innovation Fellows is a programme of Stanford's d.school (design school) that empowers students of all nationalities, levels, and subjects to become agents of change in higher education. The programme coaches the students to engage with innovation and entrepreneurship ecosystems, creativity, and design-centered approach to societal challenges. UIFs operate as a global network of more than 1,500 members and as think tanks at their home institutions. They develop a comprehensive overview of innovation and entrepreneurship activities on campus and make suggestions on how to improve them. In

cooperation with faculty, university leaders, and regional stakeholders, UIFs promote new courses, organise academic and extracurricular events, advocate various partnerships, etc. The Twente Region often envisages itself as the Silicon Valley of Europe, and in 2016 first students from UT did the training at Stanford and joined the movement. Recently, they have launched a project of much regional import – the ‘Keep Talent in Twente’ initiative. Together with the Municipality Enschede and Novel-T, these UIFs seek to understand why students leave Twente, and how to make the region more attractive to them. A survey of 454 students from all regional institutions revealed a need to increase awareness about local employment opportunities and the number of jobs in non-tech sectors, arrange more internationally inclusive working and cultural environments, improve housing and traveling infrastructures, etc. The initiative rests on the assumption that the situations can improve only if all stakeholders in Twente involve the young talent in discussions, decision-making, and projects. To exemplify, the Amsterdam Economic Board (AEB) has mobilised young fellows to make a difference in the Amsterdam Metropolitan Area. Similarly, to the Twente Board, AEB works for the economic development and liveability of the area by devising regional strategic agendas and sustaining relationships between various actors. Among others, it connects young people with ideas for the advancement of the region to decision-makers that have the capacity to put their proposals into action.



Could the Twente Board take the local UIFs aboard?

### 4.3. Ingenious platform

Ingenious is an international platform that mediates between the students and academics on the one hand, and external partners like companies, municipalities, or non-profit organisations, on the other hand. Through the platform, the students can access real-life challenges posed by other participants. Throughout a semester, students work in interdisciplinary teams that may consist, for instance, of a physiotherapist, economist, creative writer, teacher, and engineer. The team can receive mentoring support from a network of tutors, provide an external evaluation of a firm’s operations, look for solutions to the client’s problems, design and/or prototype a product, and so on. In the end, the results are pitched to the owner of the challenge. With the exercise, the students have an opportunity to enhance their professional skills and make personal connections.

At Linköping University in Sweden, Ingenious is integrated into the curriculum as an optional course of eight credits. Legally, the platform is a subsidiary of Almi Östergötland, a regional business development company funded by the regional authorities, two major municipalities, and the university. This ensures that the challenges and the outcomes of the projects are useful for the region. The outcomes are the property of student teams, but problem owners may purchase their ideas, and would frequently offer these students summer jobs and internships. That said, in Linköping, Ingenious is a successor of Demola, a platform that had been running on the same terms for a while, which eased its integration into teaching and learning. In Twente, without the preceding tradition, student participation might remain informal, and it might take a considerable time to attain an active involvement of both HEIs and their regional stakeholders.

Would the Twente Board post a challenge on the Ingenious platform?

### 5. Recommendations

Considering the findings we had from the primary and secondary sources of information, and their analysis, we put forward the following recommendations in the order of priority. This means that the first two recommendations constitute our top two suggestions to the Twente Board.

35

#### **1) Clarifying what the Twente Board expects from the HEIs in the region with regards to each of the Agenda's action lines.**

The Agenda for Twente 2018-2022 has four action lines, but only Action line 2 (labour market and talent) indicates the role of knowledge institutions to some extent. However, even in the action line 2 the mode of implementation of the discussed tasks, and the role of each stakeholder in materializing the predicted tasks remains unclear. The TB can implement some simple planning tools (for instance, Swim Lane Diagrams) to indicate a (primary) participatory action plan for the regional stakeholders in case of each action line. Additionally, before doing so, the TB can benefit from development of 'roadmaps' (e.g. in collaboration with academic and business partners) for the key economic sectors for the region to have a clearer basis for the long-term action plans. Such sector-specific strategic 'roadmaps' can provide a basis for the implementation of operational tools like Swim Lane Diagrams.

#### **2) Promoting the development of 'hybrid spaces' among the regional stakeholders with the participation of HEIs (institutionally as well as individual academics and students)**

Itself a Triple Helix entity, the TB has a potential to advocate for the formation of further 'hybrid spaces' among the regional stakeholders (public, business, civil, and academic sector)

so that by creating closer contact among them, opportunity for achieving more consensus is raised and seized. To do this, the aforementioned four major categories for external engagement of academics need to be taken into account, i.e. people-based, community-based, problem-solving and commercialisation activities.

### **3) Making the other, non-high-tech but key sectors for the regional economy (e.g. agriculture, tourism, construction and transportation) a clearer target for knowledge-based innovations.**

While the importance of well-established business sectors for the regional employment is highlighted in the TB's vision and mission statement, the role of innovation and knowledge institutions in improving the growth of these sectors is not clear in the Agenda. This issue can be addressed by the consensus-making process which the TB can initiate among the Triple Helix system actors in the region, unravelling the potential for further engagement of the HE institutions. Here again, further clarity is needed in the role distribution among the regional stakeholders which can be addressed through implementation of planning techniques like those mentioned above. In short, the TB can take a lead in the formation of sector-specific Triple Helix forums (e.g. in the form of committees) to stimulate knowledge-intensive innovation in the non-high-tech sectors it has deemed as key for the region in its vision and mission statement.

36

### **4) Using the Twente region for piloting the solutions for global challenges**

Circular economy and sustainability is one of the four action lines in the Agenda for Twente, and this very theme is one of the solutions considered to address some of the persistent global challenges. As the UT also considers the tackling of global challenges at the core of its strategies, the TB can harness the opportunity provided by the match between the Agenda and the UT strategy, and encourage the public sector, the business sector, and the HE sector in the region to make the region a sort of living lab and a pilot site for designating and testing the required solutions for circular and sustainable economy. This can also help to give a clearer direction to UT (and other HEIs in the region) regarding their high-tech oriented strategies and aspirations.

### **5) Identification of clear regional strategies for branding the region as an attractive area to live and work in.**

The existing Twente Branding initiative focuses particularly on High Tech Systems and Materials (HTMS), leaving out the crucial factor of existence of scale-intensive industries, which can accommodate large employment opportunities and reflect an attractive destination for labour and talent retention. Furthermore, establishment of large scale industries can act as a client base for the high-tech SMEs in the region, facilitating their growth.



### 6) The implementation of the problem-based learning method.

The shift to a problem-based learning educational model is likely, as all other organisational changes, to meet some resistance from academic staff and students who want to keep the status-quo. To convince these people of the added value of this educational method, it is important the first cohorts of students have a smooth problem-based learning experience. One of the crucial elements in it is that students will find interesting and collaborate with firms for which they can execute their project. As also firms are not familiar to this new learning method, the Twente board could play an important role by using their influence in the industry to mobilize firms, encourage them to open their doors and convince them they could benefit from hosting students.

## 6. References

- Arbo, P. and P. Benneworth (2007), "Understanding the Regional Contribution of Higher Education Institutions: A Literature Review", OECD Education Working Papers, No. 9, OECD Publishing, Paris, <https://doi.org/10.1787/161208155312>.
- Charles, D. (2018, June). *Universities and Public Engagement*. Presented at the Twente RUNIN Summer School on Universities and Regional Engagement, Enschede, Netherlands.
- Christopherson and Clark (2010) "Limits to 'The Learning Region': What University-centered Economic Development Can (and Cannot) do to Create Knowledge-based Regional Economies", *Local Economy*, Vol 25, Issue 2, pp. 120 - 130, New York, <https://doi.org/10.1080/02690941003741127>
- Hospers, G.-J. (2006). Silicon Somewhere? *Policy Studies*, 27(1), 1-15. doi:10.1080/01442870500499934
- Hughes, A., & Kitson, M. (2012). Pathways to impact and the strategic role of universities: new evidence on the breadth and depth of university knowledge exchange in the UK and the factors constraining its development. *Cambridge Journal of Economics*, 36(3), 723–750. <https://doi.org/10.1093/cje/bes017>
- Kotter, J. (2011). *How to create a powerful vision for change*. Forbes. Retrieved from [www.forbes.com/sites/johnkotter/2011/06/07/how-to-create-a-powerful-vision-for-change/#514bbbed51fcf](http://www.forbes.com/sites/johnkotter/2011/06/07/how-to-create-a-powerful-vision-for-change/#514bbbed51fcf)
- European Commission (2017). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. A renewed EU agenda for higher education. COM (2017) 247 final, 30.5.2017, Brussels. Retrieved from: [https://ec.europa.eu/education/sites/education/files/he-com-2017-247\\_en.pdf](https://ec.europa.eu/education/sites/education/files/he-com-2017-247_en.pdf)
- European Consortium of Innovative Universities (2015). The role of Universities in the Smart Specialisation Strategy process. The ECIU perspective. Retrieved from: [http://eciexchange.com/ECIU\\_Papers/The\\_role\\_of\\_Universities\\_in\\_the\\_Smart\\_Specialisation\\_process.pdf](http://eciexchange.com/ECIU_Papers/The_role_of_Universities_in_the_Smart_Specialisation_process.pdf)

- European Commission (2018). Regional Innovation Monitor Plus. Overijssel. Retrieved from: <https://ec.europa.eu/growth/tools-databases/regional-innovation-monitor/base-profile/overijssel>
- van Herwaarden, R. (2017). Regional Innovation Policy: Twente & Overijssel in light of the Regional Innovation Scoreboard 2016 (Bachelor thesis). Retrieved from: [https://essay.utwente.nl/73529/1/VanHerwaarden\\_BA\\_BMS.pdf](https://essay.utwente.nl/73529/1/VanHerwaarden_BA_BMS.pdf)
- Walendowski, J., Kroll, H., Stahlecker, T., & Baier, E. Regional Innovation Monitor: Innovation Patterns and Innovation Policy in European Regions - Trends, Challenges and Perspectives. 2010 Annual Report.

# Making 'Twente Works' Work - High Tech & Human Touch

## Contents

1.	Introduction.....	39
2.	Overview of the situation in Twente .....	41
3.	Interpretation and problem statement.....	44
4.	Strategy and best practice examples .....	44
5.	Conclusion and Top Recommendations .....	49
6.	References .....	50

## 1. Introduction

The region of Twente is working hard to secure an economically bright future. The Twente Board wants to develop the region into a globally leading technological region by focusing on high tech systems and materials (HTSM). This economic development should influence the societal challenges in the region positively and transform Twente into a sustainable knowledge economy in the region and in the Netherlands<sup>1</sup>. The Twente Board, however, is not the only actor in the region. Other actors include the Regio Twente, the municipalities, and higher education institutes (HEIs) such as the ROC van Twente, Saxion, and the University of Twente (UT). Despite many efforts of the Twente Board and other actors - and many things going well - it has been proven difficult to make Twente a booming, high tech economy. The Twente Board, therefore, wants to know: *how can cooperation between regional higher education institutes and other regional actors be improved?* When studying this question, we identified a shared theme that connects directly to the regional cooperation and the economy, but encompasses more than high tech materials and systems. This chapter discusses the identity, societal and cultural issues that need to be addressed to improve the cooperation between regional HEIs and the other regional actors in order to improve the economic, cultural, and living climate in Twente.

39

Historically speaking, references of the region 'Twente' go back to 800 BC (797: Tuanti; 799: Tueanti<sup>2</sup>) suggesting that the area has been regarded as one region for more than a millennium. Inhabitants know they are a part of Twente (as opposed to adjacent regions such as De Achterhoek or Salland) and the region has its own dialect, Twents. Twente or the regional

---

<sup>1</sup> Several economic sectors are key sectors for the Dutch economy. High tech systems and materials is one of them and has strong regional localisations, for example in Twente ([www.topsectoren.nl/](http://www.topsectoren.nl/) accessed on 220818).

<sup>2</sup> <https://nl.wikipedia.org/wiki/Twente> accessed on 170818.

denominator 'Twents' are also used to refer to a wide range of products and events, ranging from a football club (F.C. Twente) to a higher education institute (R.O.C. Twente) and delicacies (a local vineyard, Twente wijn and Johma "*oet Twente*" - who produce toppings for the most quintessential Dutch lunch: sliced bread). Alumni of the Academie voor Kunst en Industrie (Academy for Art and Industry, AKI) like Daan Roosegaarde work all over the world with their unique hybrid of technology, art, and social design. So, Twente and Twents appear to unite the region and also highlight non high-tech regional talents.

Yet, the dominant narrative when it comes to stimulating the region's economy is focused on 'High Tech'. The purpose is to attract talented students and staff to the HEIs and companies as well as to showcase promising start-ups or create new opportunities for established companies coming to the region. However, it appears to be quite a gap between the high tech related economic initiatives and the other talents of the Twentenaren. In addition, any economy needs to take its social and cultural dimensions into account to be sustainable: talents that moved to Twente for an education or a job will move away if there are better conditions and opportunities elsewhere. Fortunately, some of the foundations for bridging the gap can already be found in Twente. The Twente's openness to new opportunities, the '*can do*' attitude of the representatives of the various networks we met during our week in Twente, and the already existing relationships between the different regional actors are important strengths of the region. It is significant to build on regional strengths to create and embed changes related to economy, innovation, HEIs, municipalities, and other stakeholders (NUCLEUS 2017a, 2017b).

40

### Process and methodology

This policy brief was written in two stages. First, the RUNIN Summer School on '*The governance of knowledge and innovation*' brought early-career academics from all over Europe to Twente for five days in June 2018. During this week, we gathered information about the region of Twente as well as the Twente Board. We attended lectures from experts from the Twente Board, the local media, several professors, and others. We also interviewed six local experts and stakeholders, and we had informal talks with several others. This information was structured into the first draft of the policy advice. On Friday June 29, we presented our initial analysis to Geert Braaksma, Spokesman for the Twente Board.

In the second phase, we used Mr. Braaksma's feedback and relevant insights to deepen our understanding and refine our findings. We also enriched our analysis by including best practice examples. The current advice is thus the result of the lessons learned and data collected during the Summer School as well as further analysis and group discussions.

In the following sections, we present an overview of our findings and the challenges we identified. We then proceed to discuss several strategies to overcome the challenges and finalise with recommendations.

### 2. Overview of the situation in Twente

Historically, Twente Region was a settlement in which locals largely engaged in agricultural activities to make a living. As over time it became harder to generate income through agricultural activities, locals started weaving linen. Over the years, several manufacturers were established mainly in Enschede and surrounding areas of Twente. From mid-18<sup>th</sup> century until the Second World War, the textile industry underwent a period that can be characterized as golden age. The employment in the whole region was largely dependent on the industry. In this period, the seeds of the notion that Twente is a technical region were planted and flourished. However, things changed dramatically early 1960s, as manufacturers in the region were not able to compete with relatively lower cost of textile production elsewhere in the world. The demise of the textile industry started and by the 1970s the “textile boom” was already over. The fall of textile industry not only left the region with an employment problem but also a lack of identity. The technical part of textile industry that formed and consolidated the identity of the region for about a century was shaken and something new needed to be constructed. Despite the fact that old textile related technical days were gone, a completely new identity did not emerge. Rather, a reformed and modern version of the technical identity was born, namely high tech. The global conditions such as development of the first computer, Internet and growing digitalization gave rise to the idea that old technical days might be gone but the period of high tech and digitalization is on the horizon.

41

In recent decades, Twente region has gradually created a distinct regional identity narrative relying on its innovative and entrepreneurial character (Terlouw, 2018) and the region brands itself with the motto of “*The entrepreneurial high tech region*” ([www.twente.com/en](http://www.twente.com/en)). The HEIs in Twente has played a significant role in the development and entrenchment of this regional identity via creating high technology spin-outs (Benneworth & Ratinho, 2013). In 2015, two universities in the region, UT and Saxion University of Applied Sciences (UAS) created more than 2000 start-up companies (Twente Index, 2018). The sectoral composition of the regional economy further strengthens the identity. HTSM is one of the strongest sectors in Twente. Around 10% of the regional workforce have jobs in HTSM, while the share of this sector in whole Netherlands is 6.5%. The HTSM sector employment has also witnessed a stronger increase in Twente (5.4%) than the Dutch average (0.2%) since 2007 (Twente Index, 2018). These figures seem to support the regional identity of Twente based on the high tech and entrepreneurship. However, the entrepreneurial high-tech region discourse resonates differently in the local communities and does not fully mirror the realities of Twente as the

findings from the fieldwork suggest. This narrative is found to be problematic in a number of aspects.

First of all, there is a misalignment between the manifestation of Twente and the realities of the region. Although the region is good at producing high technologies, it is ambiguous whether those technologies really touch the humans in the region. During the fieldwork, it became apparent that the ordinary people in the region do not recognize themselves in the high-tech sector and the majority of the citizens are not involved in this nor are fully aware of the possibilities that high tech can contribute to their lives. This has created the tension in the region as expressed by some participants in a Think Tank event organized by Design Lab of UT on 28<sup>th</sup> June 2018: *“Municipalities say that they are high tech, university (UT) says it is high tech. I live in a village near Oldenzaal and I ask you; what does high tech mean for me?”* Several inhabitants we spoke to during the Summer school articulated similar views, which lead to the diagnosis that many local people do not identify themselves with the existing high-tech narrative, and they feel left behind. In addition, despite of the fact that the region excels in entrepreneurship and ranks high in the number of spin-offs and start-ups established, the unemployment is still a big problem in the region. The unemployment rate has been higher than the national average in the last ten years and it is reported as 5.2% for 2017 in contrast to 4.9% national rate (Twente Index, 2018).

42

Secondly, the branding of the region as a high-tech region, which is also known for its entrepreneurial spirit, makes the economic mindset prevalent in the strategies, agendas developed and initiatives taken by regional stakeholders. The initiatives are designed in such a way that they are expected to serve the purposes of economic development. When the documents like “Agenda van Twente” and its successor “Agenda voor Twente” are examined, the economic focus is easily grasped. In the projects developed at the UT, the research projects are expected to touch upon the issues related to high tech in one way or another. However, the identity of a region is hard to depict only in economic terms, and it includes the social and cultural dimensions as well, which seems to be lacking in the Twente region’s strategic positioning of itself and the policies formulated.

Thirdly, the dominance of high tech and the subsequent economic mindset in Twente region emerges in the definition of stakeholders. In the interviews, all relevant stakeholders were commonly defined as ‘businesses’ regardless of their public status by the interviewees. At the same time, the composition of the networks reflects the emphasis on high tech. This is also valid for Twente Board, where out of ten members, only one of them is a representative from a social welfare organization. A related issue regarding the operation of the networks is that they tend to have top-down approach with the old-fashioned way of identifying societal challenges and providing solutions from experts’ point of view. The interviews indicated that

it is always exactly the same people from economy-related institutions in the similar networks. The role of citizens or societal users is critical especially in recognizing the current regional problems, yet has been neglected in Twente. Inhabitants feel left behind in decision-making process and it is possible that decisions taken on local scale have not been inclusive enough.

The focus on high tech also creates tensions regarding the sense of belonging of the inhabitants of Twente, which triggers a fourth, significant issue for the region: the brain drains of the talents. Over the past couple of decades, Twente has struggled to keep university graduates within the region. It has been mentioned that Twente lacks a vibrant social life and is short of cultural events compared to other parts of the Netherlands, which makes it vulnerable for the leave of well-educated people who look for a vibrant, vivid social and cultural environment. Although an increase of focus on cultural life and vibrancy of the region may result in filling the void of identity and capturing a significant part of graduate talent in Twente, there is still room for improvement, particularly when considering talent. Whenever there is a discussion on talent, the focus has mostly been on university graduates (both Dutch and international). We argue that local people again have been left behind in a way that their potential of any kind of skills are never mentioned in the debate, strategic plans or policy documents. There seems to be great potential in the local talent ranging from culinary to photography and musical skills that should be recognized and can be tapped into.

43

As mentioned above, the high-tech narrative has overshadowed other important aspects of regional development, one of them being cultural atmosphere in Twente. While supports for high tech focused start-ups are quite abundant and organized; non-high-tech start-ups, including cultural and creativity related ones, struggle to navigate their way. They are indirectly urged to frame their focus on high tech or else they are in this arduous journey alone. There is also a need to revive the cultural and social life in the region. Many inhabitants that participated in the Think Tank event uttered that frequency of cultural events are quite rare. Contrary to common belief, finding a job may not be the most important factor in one's decision to settle in a region. Lack of strong cultural life and vibrancy further causes flow of talent, an important problem the region has faced in the last decades, which brings us to our next diagnosis; the rather narrow conceptualisation of talent. This issue came up a number of occasions and has been repeated by a significant number of stakeholders during the fieldwork. The interviewees and the participants of the think tank meeting mentioned that Twente region faces challenges in tapping into talent and retaining them in the region.

Most of the stakeholders in the regional networks such as Twente Board hold a firm belief that Twente is a high-tech region and should be working to consolidate this identity as can be seen in the promotional outlet mottos such as *Twente: The entrepreneurial high-tech region*. The high-tech narrative that is prevalent in the region has resonated considerably within the UT



particularly by those who have an academic background in technology related disciplines. As a result, UT recently changed its motto to *High Tech Human Touch* ([www.utwente.nl/en/](http://www.utwente.nl/en/)). However, the high-tech narrative in the region has been so dominant that it has overshadowed other growth paths that fall outside of it. This narrative should not be seen as the only or as a regionally uniting narrative and instead needs to be questioned.

### 3. Interpretation and problem statement

Based on our findings, we believe it is necessary to adjust the assignment by the Twente Board with regards to the regional cooperation to broaden the focus from high tech systems and materials to high tech *and* human touch. The original question was: “*How can cooperation between regional higher education institutes and other regional actors be improved?*”. The previous section showed that there are many issues related to what can be called ‘the sense of belonging’, such as what is the regional identity in the 21<sup>st</sup> century (who is considered talent in the region in this narrative; and which start-ups, companies, or sectors should the economic narrative reflect); who gets heard in major economic decisions impacting the whole region; the lack of attention for additional growth paths focusing on non-high tech talent and initiatives; the importance of social cohesion and the living climate for a sustainable economy; and more. We think that the following question captures the theme better: “*How can Twente Board contribute to improving the sense of belonging in Twente so that can Twente Board and other regional actors can realise their goals better?*”

44

In the following, we present four strategies to address the problem of the sense of belonging.

### 4. Strategy and best practice examples

Based on the challenges identified, the most important action is to improve regional identity and figure out inclusive agenda where all citizens and organisations in the region feel themselves as important players in the regional development. Our suggestions are supported by literature and followed by best practice examples.

#### 4.1. Towards an inclusive development by broadening Twente Board’s horizon

Twente Board should broaden its horizon to not only focus on economics but also emphasise societal and cultural challenges by adopting a more inclusive approach. Although the development and application of new technology can make part of the solutions for grand societal challenges, regional strategies and initiatives should be designed to foster collaborations from all disciplines and professions, not just high tech. Accordingly, current high-tech focus needs to be more specific and effectively linked to other fields. Based on the advantage of given high tech capabilities, Twente can promote the collaborations across different disciplines, for example, how technology can improve works in arts and cultural heritage or how ICT contributes to active ageing in the region. Such multidisciplinary

collaborations may have positive effects towards the current labour market by reducing the unemployment rate and, at the same time, increase the opportunities to get external funding from European Union. In order to reach the objectives, it is critical to obtain the insights from different sectors and actors so that their expectations and willingness to collaborate can be duly addressed.

### *Policy background*

The suggestion is in accordance with the **Smart Specialisation Strategy (S3)**, a place-based approach towards innovation and regional development suggested by European Commission (EC). In this strategy, a wide stakeholder engagement is encouraged by an **Entrepreneurial Discovery Process** in the prioritised domains identified from region's advantages. A broad view of innovation is embraced, hence, encourages development across different disciplines, not only technologies. Further details on tools to implement S3 can be found on S3 platform by EC (nd).

### *Best practices*

University of Twente has already established a number of support services to foster regional innovation and support local businesses. Kennispark Twente (UT) runs the **Science Shop**<sup>3</sup>, which is an intermediate organisation enabling knowledge transfer services for non-profit organisations, citizens of the Twente region, and small and medium-sized enterprises. The Science Shop is a concrete example on how HEIs can contribute to regional development by providing academic expertise for serving the growth of local economy and increasing social interaction with local stakeholders.

45

However, these services could be further promoted to expand the high-tech focus to other sectors for creating multidisciplinary, cross-sectoral collaboration. This could be achieved by reaching out more actively to different target groups in the region. For example, the **University Consortium of Pori** (Pori, Finland) has offered its expertise in robotics to different stakeholders in the Satakunta region by asking "what could robotics do for you?" This has led to a number of **ERFD funded projects**<sup>4</sup> which explore the possibilities of exploiting high tech expertise in other fields. One of the most recent projects is with a local rehabilitation centre, and it aims to find solutions based on robotics to guide people with memory illnesses, thus bringing together local expertise in high tech with the growing health and welfare sector.

---

<sup>3</sup> [www.utwente.nl/en/ga/science-shop/](http://www.utwente.nl/en/ga/science-shop/) Accessed on 18<sup>th</sup> August 2018.

<sup>4</sup> <https://villimpilansi.fi/en/satakunta/robotti-tyon-raskaan-raataja/> Accessed on 18<sup>th</sup> August 2018.

### 4.2. Towards an inclusive society by promoting cultural and social events and utilising alumni effectively

Campaigns to improve the identity of the region can be targeted to both 1) citizens who currently live in the region and 2) people who already left the region. Promoting talent and culture initiatives is critical to engage current citizens while considering leavers as “glocal ambassadors” would be helpful in sending meaningful messages from the region to other corners of the world.

Firstly, there should be a paradigm shift in defining what talent is. It can be from a mere focus on university graduates to encompass tapping into local talent outside the university, depending on the priority of the region. Later, efforts on turning Twente into a more attractive region can be made by increasing both in quality and quantity of cultural and social events. Festivals on different topics associated with the region; such as music, design, fashion, sculpture, light, and/or photography; can be organised in different municipalities every year in a circular mode. Such establishment will be helpful in creating a common regional identity.

The phenomenon of people leaving the region can be transformed from brain drain problem to “**glocal ambassadors**” opportunity. Although the sense of belonging to the region is mainly nurtured throughout the studies, sufficient student and alumni engagement mechanisms also support in connecting with people outside the region and producing new generations of “Twente ambassadors” around the world. Some activities working towards this purpose include annual alumni meetings, regular news brief to subscribers on region’s events and surveys from universities to their students to get students’ feedback.

46

#### *Theoretical background*

In general, **regional identity** can be defined as “an emotional phenomenon related to regional consciousness, thus entailing a sense of belonging as well as distinctions between social groups” (Zimmerbauer & Paasi, 2013, p32). Regional image is presented and perceived by both its current citizens and people outside the region (Hospers, 2011). Semian and Chromý (2014) indicated that regional identity nevertheless can be either the driver or the barrier for regional development. In the case of Twente, according to interviews, it is suggested that improving regional identity would work positively towards regional development, especially in solving “brain drain” issue.

#### *Best practices*

The expert interviews with staff members of University of Twente highlighted how teaching personnel has developed **individual relationships with students**. These relations are maintained after graduation mainly through social media. A strong engagement with students can be nurtured throughout the studies, and as one of the interviewees mentioned, her

graduates would return to Twente “in a heartbeat” if they were asked to do so - despite of their current location.

However, changing the focus from ‘brain drain’ to ‘brain gain’ and producing “glocal ambassadors” should not lie on the shoulders of individual academics, but a more coordinated alumni engagement mechanisms should be established. As **Alumni Go Europe (2008-2010)**<sup>5</sup> project’s results show, that instead of organising a number of high-costs events to engage with alumni, a simple up-to-date contact database, an improved communication strategy and a wider visibility in social media/career networks can enable reaching alumni and establishing long-term relationships with them.

### 4.3. Encouraging the supports from different stakeholders, especially focusing on region’s university

In addition to more traditional engagement mechanisms, such as knowledge transfer services, higher education’s contribution to regional development could also be in fostering critical thinking. Instead of relying on the conventional narratives on the once successful textile industry region transformed into a high-tech hub, interaction with higher education institutions could bring new insights to the current emerging issues that characterise the regional identity of Twente of today. A “university of questions” is where academics and students can help to raise the right “questions” in order to let regional authorities define where they actually want to go and why. It is suggested that different level of universities, not only governance board, should be engaged and utilised in the specific project or sub-units of Twente board.

47

#### *Theoretical background*

**Triple helix** is the core concept of innovation developed since mid of 1990s where the collaborations among three helices of university, industry and government are encouraged (Etzkowitz & Leydesdorff, 1995). It aims to enhance knowledge transfer, products and services development, and is therefore considered as the key component for innovation and economic growth (Arnkil et al., 2010; Etzkowitz, 2003). The importance of universities is suggested based on **the changing roles of universities** as their third mission in regional development, beside teaching and research responsibilities.

#### *Best practices*

University of Twente has identified that fostering interaction with local stakeholders is a way to bring new insights outside of academia and build a shared understanding on emerging

---

<sup>5</sup> [www.case.org/Documents/PublicPolicy/CASE\\_Europe/AlumniGoEurope.pdf](http://www.case.org/Documents/PublicPolicy/CASE_Europe/AlumniGoEurope.pdf) accessed on 18th August 2018.

regional issues. Thus, it has launched a series of **World Café meetings**, which is an interactive, inclusive model for gathering different views on a particular topic, consisting of round tables and finally concluding presentations for sharing the main content from these discussions.

Another potential way to reach different stakeholders on a larger scale would be to open universities to non-profit organisations, businesses and citizens following the **Slingerbeurs**<sup>6</sup> model. It is an event that currently brings together businesses who aim to serve NGOs by providing free-of-charge services and expertise. Launching this new forum for engagement in a higher education context would expand universities' knowledge transfer from a rather narrow high-tech collaboration to a wider social interaction. It would also allow all staff members to take part in out-reach activities at least one day a year.

#### 4.4. Combining both top-down and bottom-up approach in regional development

Bottom-up feedback can be supplemented by including several stakeholders which are representatives for societal demand side such as: NGOs, citizens, or end-users in general. The choice of stakeholders may be various depending on the purposes of projects. The inclusion of several NGOs can be identified as a practical strategy to be implemented. With the widening of its organizational structure, more comprehensive engagement of civil society can be ensured. Even if other stakeholders are not permanently embedded in the organizational structure, relevant stakeholders can temporarily be invited into the Board meetings when a related issue is being discussed for consultation and broader engagement purposes. A shadow board can be established as suggested by Group 1.

48

Citizen engagement should also be promoted. It can be realized by public meetings with the aim of communicating and disseminating what Twente Board and its activities are about. Secondly, the polling of the "Twente Works" to get the opinion of mass public and incorporate them into the decision-making process. It is suggested that the voice from citizens may be collected through different ways of communication such as engaging civil organisations which work closely with citizens, Design Lab and local media.

#### *Theoretical background*

The actions suggested are based on **the quadruple helix of innovation**, a development of the triple helix. Triple helix has been increasingly questioned about its effectiveness on the argument that the model does not ensure a long-term sustainable growth due to the lack of society's involvement (Miller et al., 2016). Accordingly, the purpose of developing quadruple

---

<sup>6</sup> [www.deslinterhengelo.nl/de-slinerbeurs/](http://www.deslinterhengelo.nl/de-slinerbeurs/) Accessed on 19<sup>th</sup> August 2018.

helix is adding to the triple helix model a fourth helix named as societal users such as civil society, media and culture based public, citizens and customers that possibly takes part in the process of knowledge creation (Afonso et al., 2012; Arnkil et al., 2010; Carayannis & Campbell, 2009; MacGregor et al., 2010). **Bottom-up initiatives** strengthened by **top-down programs** according to this model are believed to lead to the most successful results (Etzkowitz, 2003).

### *Best practices*

During the RUNIN Twente training school we learned that local media<sup>7</sup> has played an important role in revealing emerging local issues, such as high volume of flooding of properties and its economic and social impact. **The 1 Enschede newsroom** has engaged with the citizens of the Twente region by asked them to tell their stories e.g. via questionnaires. The most striking results has been brought to the attention of the local authorities.

There are, however, also alternative ways gather information from citizens to support local decision-making processes. **Elävä Pori project**,<sup>8</sup> led by Aalto University (Helsinki, Finland), is a multidisciplinary initiative that gathers collective knowledge about urban space with cultural mapping and artistic projects. These individual projects are conducted in the city centre with local inhabitants, and they aim to verbalise collective knowledge and citizen's experiences on urban spaces. The collaborative learning process, spearheaded by arts and design students, can produce information and insights to the local authorities that would not be possible to gather with traditional means.

49

## 5. Conclusion and Top Recommendations

In this chapter, we summarised and elaborated the solutions for the issues related to the sense of belonging in Twente: the Twente identity, what Twente is talented in, and the inclusion of the previously not (sufficiently) heard voices in the regional debates, and more. We identified several challenges and strategies to overcome them in order to present an answer the question: *“How can Twente Board contribute to improving the sense of belonging in Twente, so that can Twente Board and other regional actors can realise their goals better?”* We end up with five recommendations. These address the sense of belonging to contribute to forming a sustainable and attractive economic region for current as well as future Twentenaren.

To start with, we recommend the Twente Board to implement the following two actions:

1. Establish a (formal) mechanism to include the voices of all stakeholders including citizens in discussions and decision-making. Stakeholder involvement does not mean

---

<sup>7</sup> <http://enschede.1twente.nl/> Accessed on 19<sup>th</sup> of August 2018.

<sup>8</sup> <https://elavapori.wordpress.com/> Accessed on 19<sup>th</sup> of August 2018.



that stakeholders decide, but the views they present in discussions deserve to be considered seriously. Failing to do so can lead to disillusion and further alienation.

2. Twente Board should broaden its horizon from the focus on economics; it should also include societal and cultural challenges as this will contribute to transform Twente into a diverse economy that attracts people on its own merits instead of for (temporary) job or education opportunities.

Furthermore, the following actions could support the Twente Board in improving regional cohesion as a means to realise the goals of Twente Board better:

3. Stimulate cultural events and products that the region will be known for. This can for instance be a festival (music, design, fashion, sculpture, light, and/or photography) that will be associated with the region and will take place in a different municipality every year. This will be helpful in creating a common identity.
4. Rethink the dominant narratives in the region so they will include all parts and citizens of Twente. There's a need for many different kinds of businesses and talents in Twente: high tech needs education, distribution, marketing, all kinds of services, and more to be an attractive and stable economy. They need to work together to make Twente an economically prosperous and socially and culturally rich region.
5. Help the regional HEIs and internationally operating businesses to establish effective student and alumni engagement mechanisms as they are Twente's ambassadors around the world – remember: it is not a brain drain: it's a brain gain!

50

To make Twente into a region where all people feel included and where there is a vibrant living climate and that has a sustainable economy – that includes a large or even dominant HTSM sector alongside other paths of economic growth – will take time and dedicated effort. However, we firmly believe that that Twente Board can lead all – lifelong and temporary – Twentenaren on a path towards this ideal. The members of the Twente Board and other Twentenaren we have met have, after all, convinced us that there is a large number of talented and eager people willing to – together – make 'Twente Works' work.

## 6. References

- Afonso, O., Monteiro, S., & Thompson, M. (2012). A growth model for the quadruple helix. *Journal of Business Economics and Management*, 13(5), 849–865.
- Alumni Go Europe project website:  
[www.case.org/Documents/PublicPolicy/CASE\\_Europe/AlumniGoEurope.pdf](http://www.case.org/Documents/PublicPolicy/CASE_Europe/AlumniGoEurope.pdf)  
Accessed on 18<sup>th</sup> August 2018.
- Arnkil, R., Jarvensivu, V., Koski, P., Pijrainen, T., 2010. Exploring quadruple helix. Outlining user-orientated innovation models. Tampere: The CLIQ report.



- Benneworth, P. S., & Ratinho, T. (2013). Regional innovation culture in an age of globalisation-towards culture 2.0?. Regional Studies Association European Conference 2013, Tampere, Finland, 5th-8th May 2013.
- Carayannis, E. G., & Campbell, D. F. J. (2009). "Mode 3" and "Quadruple Helix": toward a 21st century fractal innovation ecosystem. *International Journal of Technology Management*, 46(3/4), 201. <https://doi.org/10.1504/IJTM.2009.023374>
- Elävä Pori project website  
<https://elavapori.wordpress.com/> Accessed on 19<sup>th</sup> of August 2018.
- Etzkowitz, H. (2003). Innovation in innovation: The Triple Helix of university - industry - government relations. *Social Science Information*, 42(3), 293–337.
- Etzkowitz, H., & Leydesdorff, L. (1995). The Triple Helix - -University-Industry- Government Relations: A Laboratory for Knowledge Based Economic Development. *EASST Review*, 14(1), 14–19. Retrieved from <http://ssrn.com/abstract=2480085>
- European Commission. (Nd). What is Smart Specialisation? Available at: <http://s3platform.jrc.ec.europa.eu/what-is-smart-specialisation>. Accessed on 15<sup>th</sup> of August 2018.
- Hospers, G.J. (2011). Four of the most common misconceptions about place marketing. *Journal of Town & City Management*, 2, 167–176.
- MacGregor, S. P., Marques-Gou, P., & Simon-Villar, A. (2010). Gauging Readiness for the Quadruple Helix: A Study of 16 European Organizations. *Journal of the Knowledge Economy*, 1(3), 173–190. <https://doi.org/10.1007/s13132-010-0012-9>
- Miller, K., Mcadam, R., Moffett, S., Alexander, A., & Puthusserry, P. (2016). Knowledge transfer in university quadruple helix ecosystems: An absorptive capacity perspective. *R and D Management*, 46(2), 383–399. <https://doi.org/10.1111/radm.12182>
- NUCLEUS (2017). Cultural Adaptation Report.
- NUCLEUS (2017). Annual Conference Report. [www.nucleus-project.eu/wp-content/uploads/2018/07/D6.3-NUCLEUS-Annual-Conference-Report-2017.pdf](http://www.nucleus-project.eu/wp-content/uploads/2018/07/D6.3-NUCLEUS-Annual-Conference-Report-2017.pdf)
- Semian, M. & Chromý, P. (2014). Regional identity as a driver or a barrier in the process of regional development: A comparison of selected European experience, *Norsk Geografisk Tidsskrift - Norwegian Journal of Geography*, 68:5, 263-270, DOI: 10.1080/00291951.2014.961540
- Slingerbeurs Hengelo website: [www.deslingerhengelo.nl/de-slinerbeurs/](http://www.deslingerhengelo.nl/de-slinerbeurs/) Accessed on 19<sup>th</sup> August 2018.
- Terlouw, K. (2018). Regional identities: quested and questioned in Paasi, A., Harrison, J., & Jones, M. (Eds.). *Handbook on the Geographies of Regions and Territories*. Cheltenham:Edward Elgar Publishing, pp. 256-267.
- The Wilder West - Tales of Success from West Finland website: <https://villimpilansi.fi/en/satakunta/robotti-tyon-raskaan-raataja> Accessed on 18th August 2018.

Twente Index website: [www.twenteindex.nl/](http://www.twenteindex.nl/) Accessed on 17<sup>th</sup> August 2018.

University of Twente, Science Shop website: [www.utwente.nl/en/ga/science-shop](http://www.utwente.nl/en/ga/science-shop) Accessed on 18<sup>th</sup> August 2018.

Zimmerbauer, K. & Paasi, A. (2013). When old and new regionalism collide: Deinstitutionalization of regions and resistance identity in municipality amalgamations, *Journal of Rural Studies*, 30, 31–40.

## Appendix: Sources

During the Summer school from June 25<sup>th</sup> -29<sup>th</sup>, 2018, the authors have attended lectures as well as practical and skill sessions. They also conducted interviews, had informal chats with experts and local representatives, and had several sessions to process and structure the information gathered. After the Summer School, the three groups had conversations via e-mail to discuss the chapters and finish the analysis and writing. The list of sessions is found below (the informal chats are not listed).

### Lectures

1. Inge Bakker, Regio Twente
2. Victor van der Chijs, University of Twente
3. Edwin van der Wiel, Kennispunt Twente
4. Hendrik Haaksma, Twente Board
5. John van der Vegt, Twente Board and ROC van Twente
6. Stefan Kuhlmann, University of Twente
7. Rune Dahl Fitjar, University of Stavanger
8. David Charles, Northumbria University
9. Hans Vossesteyn, University of Twente
10. Kartin Dircksen, European Consortium of Innovative Universities
11. Wilbert Pontenagel, University of Twente

53

### Practical and skills sessions

12. Anne Dijkstra, University of Twente
13. Laurens van der Velde, University of Twente
14. Henk ter Harkel and Leon, Tubantia and 1Enschede
15. Think Tank at Design Lab

### Interviews

16. Edwin van der Wiel, Kennispunt Twente;
17. Stefan Michel, Euregio;
18. Ina Bode, AKI/Artez;
19. Aleid Diepeveen, Regio Twente;
20. Frank Bouwmeester, gemeente Enschede;
21. Wim Boomkamp, Saxion and Twente Board

### Group sessions

22. Creating a radio show at the Newsroom Enschede;

23. Brain storm sessions focuses on generating ideas and a shared understanding of the situation in Twente (Monday, Tuesday);
24. Structuring the findings and writing the report (Thursday).
25. Several e-mail conversations to deepen, refine, and work on the final versions.