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Graduate Paradox at Jihlava: The Perspective of Stakeholders

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Introduction

Academics and policymakers have long recognized the role of higher education institutions (HEIs) in regional development (Caniëls & van den Bosch, 2011; Goddard & Puukka, 2008; Stephenson & Yorke, 2013; Thanki, 1999). Tertiary-educated employees are an indispensable asset for high-technological firms, clusters, and regional innovation systems (Caniëls & van den Bosch, 2011; Westhead & Storey, 1995). Well-known examples of university-driven technology transfer, such as in Silicon Valley or along Route 128 (e.g., Lécuyer, 2006), emphasize the role of universities even further and have spawned imitations in other locations.

The simplest strategy prompted by these successful examples has been to establish new, preferably public, HEIs in regions where no HEIs exist in

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order to speed up regional development (Labrianidis, 1995; Lechat, 1979; Skodvin, 1997). While in some cases this strategy has worked, in others it has resulted in different paradoxes and tensions. In this chapter, we analyze one such case—the founding of the College of Polytechnics Jihlava (CPJ) in the traditionally agrarian Vysocina Region of the Czech Republic.

CPJ was established in the Vysocina Region in 2004 as the first non-university HEI in the Czech Republic with the triple aim of preparing graduates directly employable within the region, attracting new employers to the region, and keeping young people from leaving the region. Even after ten years of CPJ's existence, the region has continued to experience high unemployment rates among highly educated people. At one point (2004), the regional unemployment rate for tertiary graduates was more than two times higher than the country-wide average. Similarly, the unemployment rate of recent CPJ graduates is considerably higher in comparison with other Czech HEIs.

In this chapter, we investigate the tensions between the regional labor market's need for highly educated employees and the study focus and structure of graduates from CPJ. Therefore, the principal research question is what is CPJ's role in providing graduates for the regional labor market? However, more general research questions stand behind it: how and how effectively can a small, new vocational HEI contribute to stimulating regional development? What barriers between this HEI and the regional labor market can be identified? To answer these research questions we will analyze CPJ's role in the region from the perspective of the stakeholder salience theory (Mitchell, Agle, & Wood, 1997). We will discuss the roles and activities of different types of stakeholders that influence the relationship between CPJ and the Vysocina Region, describe the changing dynamics between stakeholders and the HEI, and identify ambiguities that hamper the regional involvement of an intentionally regional university.

On the Regional Role of Young HEIs in Technologically “Thin” Regions

Goddard and Puukka's (2008, p. 16) description of the regional role of HEIs includes outcomes such as generating taxes, attracting new investors and businesses, supporting graduate retention, and positively

influencing the existing workforce by updating its members' skills, competencies, and knowledge. While in general this description may bear certain aspects of universality, young universities located in technologically "thin" regions in particular can only aim to fulfill some of these tasks.

Technologically "thin" regions are usually ones that have, for various reasons, become stuck at some level of modernization (Tödtling & Trippl, 2005). The economies of thin regions generally depend on the primary sector. The secondary and tertiary sectors, while in some cases significant in volume, are characterized by low diversification, low technological intensity, low value-added production, and low labor productivity. Education levels often lag behind the country average, and thus, new technologically intensive segments of production chains are effectively prevented from coming to such regions. In addition, such regions lack universities with strong research traditions, and hence new HEIs must deal with both the problems faced by the region and the problems associated with their own institutional development. In this situation, the primary tangible contribution of regional HEIs is to provide skilled labor for regional labor markets (see, e.g., Florida, Mellander, & Stolarick, 2008). Global business connections can hardly be developed as there are few high-tech businesses that require university expertise, and young universities in particular need time to cultivate such expertise or attract academics with relevant skills (Goddard & Puukka, 2008).

Similarly, regional authorities often have ambiguous expectations of regional universities and collaboration with local academics. This observation applies especially to regions that have never been home to an HEI. Moreover, the central government often cares more about the excellence of higher education in the country as a whole than in specific regions.

Theoretical Framework

The stakeholder salience theory was originally applied to business management for identifying an organization's relevant stakeholders, that is, the groups and individuals that are truly important to the activities and aims of the organization (Mitchell et al., 1997). It has also been since

used many times to analyze HEIs and higher education in general (e.g., Amaral & Magalhaes, 2002; Benneworth & Jongbloed, 2010; Leisyte & Westerheijden, 2014; Pinheiro, 2015).

Freeman (1984) broadly defines a stakeholder as “any group or individual who can affect or is affected by the achievement of the organization’s objectives” (p. 46). Thus, there are many potential stakeholders involved in an organization’s management, both external (government entities, competitors, suppliers, and communities) and internal (mainly employees). Stakeholders can also be people (such as representatives of other organizations) to whom the organization has obligations or with whom it has some other relationship. When this approach is applied to higher education, HEI officials are seen as “managers” of their institutions or organizations, whose task it is to identify relevant stakeholders and, on the basis of this knowledge, to support decision-making within the HEI (Benneworth & Jongbloed, 2010).

Mitchell et al. (1997) distinguish different classes of stakeholders (see Table 4.1) based on the possession of three basic attributes—power, legitimacy, and urgency. In the case of higher education, the stakeholder’s *power* to influence an organization is reflected in “growing pressure from students, parents and legislators to force universities to adopt more cost-conscious operating principles” (Mitchell et al., 1997, p. 869). The *legitimacy* of a stakeholder’s relationships can be viewed

as a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system

Table 4.1 General stakeholder typology

Possession of attributes		Power	Legitimacy	Urgency	Salience
Type of stakeholder					
Dormant	Latent	X			Low
Discretionary			X		
Demanding				X	
Dominant	Expectant	X	X		Moderate
Dangerous		X		X	
Dependent			X	X	
Definitive		X	X	X	High

Note: Adapted and modified from Mitchell et al. (1997, p. 884)

of norms, values, beliefs and definitions. Today, the university's traditional stakeholders (e.g. students and governments) have been supplanted by, amongst others, local industry. (Mitchell et al., 1997, p. 869)

Finally, the *urgency* of the stakeholder's claim on the organization is "the degree to which stakeholder claims call for immediate action. A good example would be the greater emphasis put on research in health/life science fields at the expense of research in other scientific areas" (Mitchell et al., 1997, p. 869). In this sense, humanities, arts, and social science departments are seen as possessing less urgency because many stakeholders both within and outside universities do not view these fields as making great economic contributions to society (Benneworth & Jongbloed, 2010).

According to Mitchell et al. (1997), *stakeholder salience* means "the degree to which managers give priority to competing stakeholder claims" (p. 854). It is positively related to the cumulative power of the three attributes that managers perceive to be present, which in turn triggers managerial actions. It is also important to note that power, legitimacy, and urgency are not static parameters, but dynamic ones. Thus, stakeholders can move from one class to another by gaining or losing particular attributes. *Latent stakeholders* possess just one attribute and have low stakeholder salience, *expectant stakeholders* have two attributes and moderate salience, and *definitive stakeholders* possess all three attributes and high salience (see Table 4.1).

Methodology

We mainly analyzed data that were obtained as part of the Contribution of Higher Education Institutions to Strengthen Socio-Economic Development of Peripheral Regions in Norway and the Czech Republic (PERIF, 2015–2017) project financed by the Norwegian Financial Mechanism 2009–2014.¹ We have applied stakeholder theory to an analysis of qualitative and quantitative data on one specific region and one specific HEI (i.e., the College of Polytechnics in Jihlava). We drew quantitative data from relevant statistical sources made available by the

Czech Statistical Office and the Ministry of Education, Youth and Sport (MEYS) of the Czech Republic, and from CPJ annual reports. We used two different qualitative research methods. First, we conducted a content analysis of regional strategic documents and CPJ strategic documents, focusing mainly on connections between the region and CPJ, and paying special attention to statements and practices related to the job market and employment rates. Second, in 2016 we conducted semistructured interviews with five regional officials and five CPJ representatives.²

The College of Polytechnics Jihlava as a New Actor in the Region

In 2000, the administrative division of the Czech Republic was redefined and new administrative units were established.³ Thus the Vysocina Region emerged, endowed with self-governing competencies for expressing local and regional identity more strongly and for promoting regional economic development more independently. Although there were several smaller branches of HEIs from outside the region located here, no public HEI⁴ was headquartered in the region before. Therefore, establishing the CPJ in 2004 was one of the first steps the region took toward emancipation. The regional authorities took advantage of the favorable conditions for establishing new HEIs (both private and public) and held negotiations with the MEYS. Between 1999 and 2010, MEYS was well disposed to establishing new public and private universities with the aim of increasing access to and availability of higher education (Kouřilová & Krejčová, 2013; Prudký, Pabian, & Šima, 2010). This aim was closely connected with the ongoing post-1989 transformation of the education system.⁵

CPJ was founded in 2004 on the foundation of an existing vocational institution, the College of Jihlava,⁶ which did not have the status of HEI. The new institution inherited from the original one its main building and facilities, its practical orientation, and its management—that is, the last director of the College of Jihlava became the first rector of CPJ. From the

very beginning, the founders aimed to establish a non-university HEI that produces directly employable graduates with bachelor's and master's degrees, that is, the institution was to retain its vocational and professional focus. Thus, study programs were meant to fulfill the needs of the region and local private and public employers. The inclusion of the word *polytechnics* in the title of the school indicates the broad spectrum of fields taught there.⁷ CPJ has three main academic streams: the first includes study programs in business and administration with a special focus on tourism and management and follows in the footsteps of the College of Jihlava's original focus; the second stream centers around the technical fields of applied engineering and IT; and the third one focuses on health care and social work. Currently, this last-mentioned stream is the only one with an accredited master's degree program. (For a list of study programs and the number of students and graduates, see Table 4.2). The business stream is predominant as 75% of all graduates finish their study within it (in 2015). According to CPJ representatives, another master's degree program focused on technical studies is currently undergoing the accreditation process, but its final approval depends on the application of the Amendment to the Act on Higher Education from 2016.

Table 4.2 CPJ study programs and the number of students and graduates (2015)

Study programs	Degree programs	Students	Graduates
Electrical Engineering and Informatics	1. Applied Computer Science	256	20
	2. Computer Systems		
	3. Applied Technology for Industrial Practice ^a		
Economics and Management	4. Travel and Tourism	1431	326
	5. Finance and Management		
Midwifery	6. Midwifery	606	121
Health care	7. General Nursing		
Clinical Social Work	8. Clinical Social Work	24	
Specialization in Health care	9. Community Care in Midwifery (master's degree) ^b		

Note: Data from the year 2015 (College of Polytechnics, 2016)

^aAccredited in 2015. The first students were enrolled in 2016/2017

^bThis study program was accredited in 2014; the first students were enrolled in the 2015/2016 academic year

Regional Context

To an outside observer, the Vysocina Region is a calm, static region with a high quality of life. This traditionally agrarian, rural region features a large number of small settlements and no single center. Only one-third of inhabitants live in urban areas, and the largest city—the regional capital of Jihlava—has a population of only 50,000. A total of 704 municipalities exist in the region, almost half of which are small villages with less than 200 inhabitants; only 34 municipalities have the official status of town. This fragmentation leads to high demands on infrastructure such as sewage systems, gas networks, the electricity grid, roads, and health, educational, and social services—and subsequently to high costs.

The demographic composition of the region is relatively stable, and inhabitants have strong local and regional identities. The population has remained unchanged since 1869 although in that time the country's overall population has increased by 40%. Most regional inhabitants are “natives,” strongly rooted within the region. The region did not experience the significant population shifts that happened elsewhere in the Czech lands during and after World War II. The originally numerous Jewish population did, however, largely disappear as a tragic consequence of the Holocaust, but there was no wide-scale internal immigration from other parts of Czechoslovakia to replace the Jews after the war.⁸ The region recently experienced a small demographic deficit, but this is not a significant trend. Ethnic homogeneity and a low proportion of foreigners (about 3%; Czech Statistical Office, 2015) are also typical for the region. Like other regions in the Czech Republic, the Vysocina Region also has to cope with population aging. The proportion of people above 65 years of age has increased from 13% in 1994 to 18% in 2014. For comparison, the oldest region in 2014 was the Plzen Region (with 18.4% over 65) and the youngest was the Central Bohemian Region (16.7% over 65); the Czech Republic average was 17.8% (CSO, 2014).

The agricultural sector makes up an above-average percentage of the regional economy, whereas the tertiary sector indicates below-average figures. The share of the secondary, or industrial, sector is also below the country average and is based mainly on metalworking (21% of the secondary sector), engineering (16%), the automotive industry (11%), and food processing (11%, Czech Statistical Office, 2013). The largest com-

panies in the region (measured by annual turnover) are Bosch Diesel and Pacovske Engineering; in 2014 they placed in the Czech Top 100 rankings. Regionally based Zdarske Engineering is also one of the stablest and largest companies in the country. Another important employer is the Dukovany Nuclear Power Station in the Trebic district, which is operated by CEZ, the second largest company in the country and the leading producer and supplier of electric energy. Entrepreneurship is not particularly strong. The Czech Statistical Office's business register indicates the presence of 108,800 companies in the Vysocina Region, which occupied the second to last place in the ranking of all the country's regions at the end of 2014. Although the number of companies in the region grew by 225% between 1994 and 2014, this rate of increase is somewhat below the national trend.

To sum up, this region differs significantly from other peripheral regions in the Czech Republic (particularly the Ústí nad Labem and Moravian-Silesian Regions). On the one hand, social cohesion, regional identity, and regional affiliation are all very strong, and environmental conditions are good because the region has not been devastated by heavy industry like other peripheral regions in the Czech Republic. Yet the region's economy faces structural problems associated with the need to increase high value-added sectors. In this respect, the situation in Vysocina seems, in some ways, to be comparable with the overall situation in the Czech Republic. Like the national economy, the Vysocina Region's economy is driven by businesses that are not based on high value-added labor but on the "advantage" of a cheap but not highly skilled labor force. Additionally, the region is relatively strongly dependent on the automotive industry, as is the whole country.

Graduate Employment in the Vysocina Region

The region's economic history has significantly influenced the regional job market as a whole, including for HEI graduates. Natural conditions suitable for agriculture long defined Vysocina's economic profile. It has always ranked among the poorer regions in the country as a consequence of its less developed industrial infrastructure and agricultural focus.⁹ People live in small towns or follow a typical rural lifestyle. Traditionally,

the stone, textile, and woodworking industries dominated the regional economy, but nowadays industrial engineering and the food industry are growing. Industrial engineering, however, is very narrowly focused on manufacturing components for the automotive industry. Thus, the region is vulnerable to fluctuations in the automotive industry caused by global economic cycles.

In addition to the specific structure of the industrial sector in the region consisting of a small number of branches of major corporations and a relatively large number of small and mid-sized companies producing mostly standard products with no technologically intensive value added, research and development (R & D) expenditures are very low. The majority of small and mid-sized businesses spend minimal resources on R & D, and when they do, they do it in a very unsystematic manner (Regional Office, 2013). Larger companies (e.g., Bosch Diesel in Jihlava, Tedom in Trebic) invest more in R & D, but even they are not able to reverse the Vysocina Region's overall low innovation performance or its low absorptive capacity. In addition, some of these firms, as global players, have strategies that do not correspond with purely regional interests and they often have R & D departments located in different regions or countries.¹⁰

Here, corporate R & D expenditures as a percentage of regional gross domestic product are the lowest in the Czech Republic alongside those in the Karlovy Vary and Usti nad Labem Regions. Public R & D efforts are also low because the local HEI and the branches of other universities operating in the region focus primarily on teaching activities. Activities promoting innovation and research are still in the planning and early-implementation stages. The regional office (i.e., the local government) has launched a research-support program (small and mid-sized businesses are entitled to “entrepreneurial vouchers”), but it is still in the pilot phase.

Unemployment Among the Tertiary Educated

Although nowadays the unemployment rate does not seem to be the biggest problem in the region, during the last economic crisis (from 2008 to 2012) there was a dearth of available jobs with, on average,

33 jobseekers for every vacant position. This ratio was one of the worst in any Czech region and indicates the overall fragility of the job market and the economy, which was and still is based mainly on manufacturing marked with low innovativeness and little existing capacity for employing highly educated people. Although the region is relatively small, low labor mobility and the poor transport accessibility of some subregions,¹¹ such as the Jemnice, Telc, and Nova Bystrice subregions, contribute to local unemployment. The economies of most lagging subregions are focused on agriculture and tourism. They are mainly rural areas with less favorable production conditions, lying outside main transport (both bus and rail) lines and with few new businesses.

Focusing on the demand side of the labor market, we see the tertiary-educated workforce in the Vysocina Region is weak due to the region's agricultural profile and specific industry focus, both with low innovativeness. Although the industrial sector provides more job opportunities for highly educated people, the narrow profile of the mainly automotive firms operating in the region make such jobs highly volatile. For example, in the first quarter of 2016 the labor office in Jihlava recorded the highest demand for positions that do not require higher education at all (more than half of offered positions). Specifically, firms were looking for craftspeople and repairers (27% of all offered positions), and machine and equipment operators and assemblers (27% of all offered positions; Úřad práce České republiky, 2016).

The supply side of the regional labor market seems to have increasing potential. The diverse educational opportunities available in the adjacent Central Bohemian Region and, most importantly, in the capital city of Prague, and at the newly founded CPJ in the region have made higher education geographically accessible for the majority of the local population.¹² Despite all the opportunities, however, the proportion of the workforce with higher education is still below the country average. Only 9.5% of the regional population aged 15 to 65 has a degree (the last reliable figure for the country-wide average, 12.5%, comes from the 2011 census), whereas almost 19% of the population aged 19 to 65 has only a primary education or not finished primary education (Czech Statistical Office, 2011).

As a result, despite the fact that the share of residents with higher education is still well below the country average, the unemployment rate of the highly educated labor force in the region systematically exceeds the national average—for example, by close to 100% in 2003, 2004, and 2012 (see Fig. 4.1). Surprisingly, the major economic downturn of 2008–2011 was accompanied by relatively low unemployment among tertiary-educated residents. At least three jointly acting factors could explain the situation: first, jobs that require higher education are not overly threatened by financial crises, that is, educated people are more likely to keep their jobs even during economic downturns; second, the number of positions for people with a tertiary education are low in a long-term perspective in Vysočina; and third, graduates often emigrate from the region due to better job offers elsewhere.

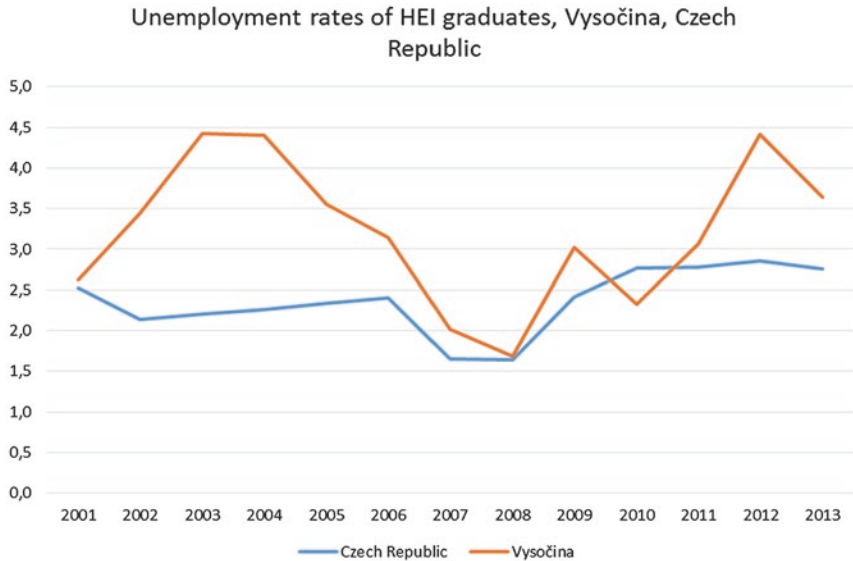


Fig. 4.1 The unemployment rate of HEI graduates in the Vysočina Region. Note: Adapted from data of Czech Statistical Office from the year 2013

Analyzing Identified Tensions

Are There Too Few Jobs for Higher Education Graduates?

Suitable jobs are particularly lacking for higher education graduates possessing a bachelor degree only, which are in fact all of CPJ's graduates.¹³ Local firms tend to prefer people with either no higher education (manual workers) or with very advanced technical skills (usually those with a master's degree in engineering). This "needs gap" seems to be permanent and has not changed during CPJ's existence (i.e., during the last decade). Even though the idea that the existence of an educated labor force would attract new employers to the region motivated CPJ's establishment, the latter has not managed to change the region's absorptive capacity in terms of higher educated labor.

In general, a region's low absorptive capacity with respect to higher educated personnel is considered to be a frequent factor limiting the influence of HEIs on regional development (Feldman, 1994; Florax, 1992; Pinheiro, 2013). In fact, the presence of a new HEI in a region is a necessary, but not sufficient condition for sparking more dynamic regional development (Florax, 1992; Pinheiro, 2013), which requires, among other things, constant and long-term interplay between regional actors and stakeholders (Benneworth, Pinheiro, & Karlsen, 2016).

Besides low absorptive capacity, we should also take into consideration the profile of CPJ graduates. Even though the spectrum of study programs seems to be relatively wide, most graduates complete the business and administration stream. For example, in 2015 about 75% of graduates received such degrees. This one-sidedness could contribute to the graduate paradox as well.

In the Czech Republic, holders of a bachelor's degree in economic fields, including business and administration, are relatively vulnerable because the prestige of the awarding HEI and the region it is located in is of great importance for employers. For example, in 2015 the unemployment rate of people with degrees in economics or business ranged from 0.4% to 20.1% depending on the HEI and the faculty,¹⁴ averaging 4.9% in total (Kvačková, 2015).

The Reliability of Unemployment Indicators

Even though there is consensus on the high unemployment rate among higher education graduates in the Vysocina Region, the quality and reliability of official supporting data are far from satisfactory. According to CPJ's annual reports (and strategic plans), the national HEI-funding method¹⁵ disrupts the comparability of results. Given that CPJ has only recently begun to offer a master's degree program, graduates of this college who decide to pursue further education elsewhere temporarily leave the local labor force. These graduates should not be considered unemployed, but they artificially increase the unemployment numbers. The currently used statistical methods do not trace such people, thus the results are overly unfavorable for CPJ. According to Zelenka and Koucký (2013, p. 8),

from the long-term perspective, graduates of both new public [Czech] higher education institutions¹⁶ face job-seeking problems. These HEIs are at a disadvantage to some extent because they do not offer M. A. degree programs yet and their graduates often pursue M. A. degrees in different towns (or regions). Even so, mainly in case of CPJ this seemed to be only a temporary matter when regional employers are only starting to get used to a new type of graduate. But in the last year there was a change after hopeful development when the unemployment rate of CPJ graduates decreased over two years from 22% to less than 9% and the current unemployment rate is more than 16%.

The above findings are based on data on registered graduates collected by the national labor office. While CPJ management is aware of the existence and significance of these data (they are used as one of the indicators for governmental funding), which are rather unfavorable for the institution, and they would like to challenge them, they have not succeeded in presenting an alternative analysis that could call into question official findings. In order to do so, CPJ has just started to promote relationships with graduates in the form of an alumni club.¹⁷ However, it has not yet systematically collected data on graduate employment, and thus there is currently very limited opportunity to provide and present differing data.

Tension from the Perspective of Regional Actors and HEI Management

The numbers presented in Fig. 4.1, although contentious, raise questions about the direct employability of CPJ graduates in particular and about regional residents with higher education in general. In an environment where jobs for higher education graduates are scarce and local firms concentrate on low-tech industries, companies do not yet accept a bachelor's degree as a relevant qualification. This dilemma is, in part, associated with two conflicting ideas about the general role of higher education. On the one hand is the very conservative view that only scientists and top management need higher education, whereas on the other hand people destined for manual and technical jobs require just secondary education. According to this mindset, those with a vocational higher education have only limited opportunities on the job market. As one informant, a senior university administrator, stated:

Sometimes I hear employers' voices or the voices of labor unions and people who have "communitistic" thinking that young people should be only apprentices or secondary educated and they should start work at 19 years of age and stay in the same job until retirement... But I think this is currently a wrong idea. So, this waiting for efficient graduates of vocational or technical secondary college is very likely nonsense because most students would like to continue studying at universities.

One CPJ representative interviewed, an employee of the Lifelong Learning Department, described her encounters with this conservative approach. She mentioned that many local companies prefer people with secondary education, but only because they tend to offer manufacturing jobs:

I am from Humpolec, where industry is growing enormously but they [employers] are looking mostly for people to operate automated lines. In the best case scenario, they might hire our bachelors from technical study programs as middle management. But most of their human resource needs are for [manual] workers... They would like people who are reliable, are able to stand 8 or 12 hours at the automated line and not be ill too often.

The second, opposing idea about the role of higher education seems to be related to some kind of social engineering or the application of endogenous growth theory (e.g., Romer, 1994). Adherents of this view expect new employers will come to the region because of the presence of the skilled labor force produced by CPJ. However, this has not happened yet as indicated by a former regional stakeholder, a senior manager at CPJ, who played a critical role in the college's establishment: "My original idea was that CPJ would produce graduates, bachelors as well as masters, and this fact would attract new firms and employers focused on more sophisticated production and services. And this would have a positive impact on the entire region. But this has never happened." Nevertheless, from a long-term perspective this statement is probably overly pessimistic: newly created HEIs undoubtedly introduce new dynamics into regions, but time and close, persistent cooperation between regional actors are necessary for achieving more visible results (Benneworth et al., 2016).

In addition, the companies operating in the Vysocina Region mainly demand graduates with practical skills. One informant (from CPJ's technical department) clearly described the profile of required graduates as follows: "So, they [local firms] are paradoxically not looking for excellent researchers, academics, but they are looking for people who are practical. If those [graduates] encounter a problem, they can solve it. If they don't know, they are able to find relevant information."

The newly accredited Applied Technology for Industrial Practice program (2015) seems to be a concrete attempt at reacting to these demands. Informants with extensive experience from Czech Technical University in Prague, a major research center with a long tradition, expressed another paradox that affects decision-making at CPJ: even though CPJ was established as a vocational, non-university institution, it must follow national requirements that prioritize success in research and emphasize academic excellence.

In short, given the elements presented, there seems to be no clear solution for increasing the employability of existing graduates in the region. The main problem lies in the unchanging (or perhaps slowly changing) structure of the Vysocina Region's industry, where most positions are for secondary school graduates only. Employers are still unsure about the advantages of a bachelor's degree over a secondary school diploma.

Moreover, there is a contradiction between the private sector's demands for practical skills and some students' interest in completing master's degrees outside of the region. Additionally, the government strongly, albeit implicitly, favors research-oriented programs through systematic conditions.

Finally, there appears to be a mismatch of qualifications and regional demands that defies simple interpretation. CPJ has strong departments focused on business, health care, and social work. In theory, the two last-mentioned fields of study should meet local demands associated with the gradually aging population. The position of CPJ graduates with bachelor's degrees in economics is relatively vulnerable mainly because of CPJ's novelty and low prestige in comparison with other well-established HEIs (see section 7.1). The higher unemployment rate among graduates could be caused by either the lower quality of CPJ graduates (who are thus undesirable for employers) or graduates' lack of interest in working poorly paid, low-prestige jobs. Nevertheless, graduates of CPJ's technical study programs—about 5% of all CPJ graduates, a figure that has grown steadily in recent years—are in a more favorable situation. Regional employers are hiring technical professionals such as mechanical engineers, and thus there is an evident gap in the workforce.

Identifying Stakeholders and Their Salience

We have identified three main groups of external stakeholders in CPJ: the regional government, regional employers, and the central government. We are aware that other stakeholders (students, graduates, etc.) could be taken into account for this analysis. Nevertheless, we have at our disposal limited data that enable macro- and meso-levels of analysis (see section on methodology).

Regional officials (i.e., those elected by inhabitants in regional elections) have the power to affect the regional labor market. They can influence development strategies and conditions for all kinds of employers. They can authorize or reject the creation of new industrial parks, introduce investment incentives, provide infrastructure for newly created businesses, and so forth. However, their authority is temporally framed

due to term limits and election cycles. Strategic instability tends to appear particularly after elections in which the ruling party (or parties) has been voted out.

We should take into consideration the fact that the founding of CPJ as a regional HEI was driven by the establishment of the region itself as a new administrative unit of the Czech Republic (the region has existed since 2000) and the establishment of this region's key stakeholder, the regional administration. Regional officials were a *dominant stakeholder* in the process of establishing CPJ, possessing both power and legitimacy. Yet, currently, their role has shifted to that of a *dependent stakeholder* who possesses legitimacy and urgency, but no real power. At the time of the college's establishment, the MEYS, provided strong motivation for the region (i.e., regional officials) to establish such an educational institution (and imbued it with the power to do so); regional higher education was supposed to increase the prestige of the region, promote economic development, and thus make the region more self-reliant. However, as one informant, a regional development official, noted, as time progressed regional officials realized that the "influence of CPJ on development is not as strong as was expected 15 years ago when it was a regional priority. And companies need only small numbers of highly skilled people."

Additionally, although the regional authorities had the power to establish an HEI, they do not have (and in fact they never did have) the legal power to operate an HEI located in their region because the ministry both regulates and funds HEIs. The legitimacy of regional officials was not found to change over time, but it seems that the legitimacy of regional officials as stakeholders is more implicit than explicit. We have discovered from research interviews that whereas CPJ officials still feel a moral responsibility toward the region, the region does not consider CPJ to be an important actor.

Regional employers, both public and private, are the second group of stakeholders to consider. As Jongbloed, Enders, and Salerno (2008) suggest, "where the *teaching and learning* function of the university is concerned, regional firms may obviously form a first candidate for partnerships. Local and regional firms provide internship (student placement) opportunities for students and express a demand for re-training and re-skilling their employees" (p. 311). We have observed that CPJ has

started to establish partnerships with firms as potential employers of its graduates. Although these companies do not possess legitimacy over CPJ, their ability to decide about whether to employ its graduates, offer student internships, and participate in program development gives them both power and urgency, and therefore, according to Mitchell et al. (1997), they are *dangerous stakeholders*. Informants expressed the belief that CPJ's study programs were and are developed in close cooperation with potential employers (particularly in terms of program content). There are also efforts underway to employ entrepreneurs or non-academics as lecturers to enhance the overall quality of study programs, that is, to improve graduates' practical knowledge and skills. Finally, local firms provide opportunities for students to complete compulsory semester-long traineeships.

Although CPJ's internship program is thriving, and practical traineeships are a necessary component for all CPJ study programs to receive accreditation, its requalification courses, which are an integral part of CPJ's lifelong learning program, are underdeveloped. Many private educational firms, which are not strongly regulated (in comparison with HEIs), provide requalification courses for workers and thus compete directly with CPJ for this particular market.

The final important identified stakeholder is the central government represented by the MEYS. Although HEIs in the Czech Republic enjoy high levels of academic autonomy, the regulatory and funding requirements put in place by MEYS impose significant limitations, hence giving the latter power, legitimacy, and urgency, and making the ministry a *definitive stakeholder*, according to the classification of Mitchell et al. (1997). The ministry's role has remained unchanged over time, but its strategic aims are dynamic: whereas 10–15 years ago establishing new HEIs was a priority, today's main objective is to stabilize the system and its quality. The motivation behind these two priorities are clear—for the former, to make higher education accessible to more students and to liberalize higher education, and for the latter, to achieve quality and accountability of HEIs (with limited financial resources).

Current regulatory and funding mechanisms favor classical research universities over their vocational counterparts. This preference is reflected in accreditation requirements, funding, the promotion of academic staff, and

the overall prestige of the institution; vocational HEIs are in a very difficult position.¹⁸ Such institutes do not receive research funding, a financial resource that constitutes a significant portion of some traditional universities' budgets.¹⁹ Frequent changes in regulatory and funding requirements, aimed at promoting excellence in research over the last decade or so (see Chap. 1 in this volume, Pinheiro et al., 2018), have produced additional uncertainties for the existence of vocationally oriented HEIs.

At the time of its establishment, which coincided with the Czech Republic joining the European Union (EU) in 2004, CPJ enjoyed significant support from MEYS. The overall strategy in higher education was to increase the number of students because enrollment figures were well below the EU average. One way to achieve this goal was to establish new HEIs, such as CPJ. As time passed, however, the situation changed: the economic crisis that began in 2008 limited the budget for higher education and demographic decline resulted in fewer applicants. Gradually, the ministry's strategy shifted from educating the highest possible number of students to improving the quality of education and strengthening university research. As elsewhere in Europe, the central government's policy concentrated on promoting world class universities, while the regional role of vocational colleges, although officially proclaimed, was not supported by the government (for more on the tensions between central and regional roles, see Chatterton & Goddard, 2000; Arbo & Benneworth, 2007).

The national regulatory environment affecting HEIs has recently been reorganized by Act No. 137/2016, the Amendment to the Higher Education Act, which has changed the way educational programs are accredited. In contrast to the old system, the new accreditation mechanism distinguishes between tertiary-level vocational/professional and academic programs.²⁰ Nevertheless, "access to money" is still a problem. Research-intensive universities have more financial resources at their disposal thanks to institutional research funding and research grants. Therefore, CPJ as a small, new regional HEI has rather limited possibilities for enriching its own budget via such means because its publication output and research grant application success rate is quite low.

Of the three stakeholders, the central government is the most salient. For CPJ, it is a clear priority to meet the requirements of MEYS and to

receive sustained funding for their mostly teaching activities. Regional officials have little effective means to influence the institution as they do not fund or regulate it, although they originally expressed the aim of establishing a new HEI. Currently, it is too early to judge if the new *Regional Innovation Strategy*²¹ will result in improvement. Despite these barriers, a feeling of general responsibility toward the region (and regional officials as well) and its development still persists among CPJ management and academics. Regional employers, although effectively collaborating with CPJ via internships and student traineeships, can offer a limited number of positions to graduates and focus mostly on hiring secondary educated personnel. After 12 years of existence, it is fair to conclude that CPJ's presence in the region has not attracted a significant number of new employers. Arguably, this would require a more developed regional innovation strategy and more collaboration between the region, the HEI, and companies (Benneworth et al., 2016).

Revisiting University Ambiguities

The most important ambiguity that led to our results is the *ambiguity of intention* (see Chap. 1 of this volume, Pinheiro et al., 2018). We have identified several mutually connected stakeholder intentions that stood at the beginning of efforts to establish an HEI in the Vysocina Region. MEYS encouraged the establishment of new HEIs to support the accessibility and massification of tertiary education. In turn, regional officials wanted to increase the prestige of the Vysocina Region and founding a new HEI was a relatively simple step toward accomplishing this goal. In addition, companies were interested in influencing the quality and quantity of their future employees, HEI graduates. But these original intentions were never properly articulated. Currently, although institutional strategies stress CPJ's regional role, the regulatory and funding requirements imposed by the central government in the hope of increasing the quality of teaching and research do not take into account the specific needs of professional or vocational HEIs and give substantial preference to research universities with an international reputation. Given the limited budget for higher education, regional universities have less access to

funds and worse regulatory conditions. The region cannot on its own financially support CPJ's regional role. To complicate matters, regional officials have been unable to define this role.

In this case, the ambiguity of intention is closely connected with the *ambiguity of structure* (Pinheiro et al., 2018), when decoupling of the HEI and the region is apparent and to a great extent related to the different "classification" of these actors in the organizational system. The region and its elected officials have no authority over higher education, and thus, under current conditions, there are limited opportunities for broader, sustainable cooperation.

Finally, the *ambiguity of history* (Pinheiro et al., 2018) played an important role in the analyzed tensions, particularly in regard to two key stakeholders—MEYS and regional officials. Despite the fact that MEYS is (and was at the time of CPJ's establishment) a definite stakeholder, its approach toward higher education has changed substantially in the last decade to the detriment of regional HEIs in general and of CPJ in particular. The establishment of CPJ was actually the highest point of collaboration between the region and CPJ actors; MEYS also devoted significant effort to this activity. It must be emphasized that between 1999 and 2005 many new private HEIs were established, whereas only a few new public HEIs were founded (Körner, 2010). Therefore, even from this perspective CPJ's establishment seems to have been an extraordinary achievement that overcame the *ambiguity of structure*. Nevertheless, after CPJ's establishment, regional officials diminished their support for the school, and now CPJ management has to deal with the situation alone. Regional government, initially a dominant stakeholder, has, over time, become a dependent stakeholder.

One must also take into consideration the historically great opportunity to establish a new HEI in a newly created administrative region. A new HEI could also boost regional identity; not only did Vysocina become an official administrative region but it also gained its own HEI. This "regional ethos" present in the beginning disappeared after several years. Today, regional officials and CPJ are entangled in the routines of everyday life and their collaboration has lost its original impetus. Although there are still personal connections between regional and CPJ officials, these actors were never able to reorganize such networking into

an institutionalized form of cooperation (cf. Zyzak, Pinheiro, & Hauge, 2017).

In addition, the idealistic conviction that merely placing a new HEI in the region will attract firms that will employ highly skilled workers, which was pronounced at CPJ's launch, turned out to be false. This result may have arisen from the lack of a sufficient long-term strategy for developing industry and supporting innovation in the region. Public policy on regional innovation definitely suffers from deficiencies in understanding opportunities and actors' roles and from an inability to mobilize collective resources and to foster collaboration (Rodríguez-Pose, 2013). The Vysocina Region had no regional innovation and research strategy until 2013, when the obligation for all Czech regions to have such a document entered into force. Nevertheless, the *Regional Innovation Strategy* (*Regionální inovační strategie*; Regional Office, 2013) takes into account CPJ only marginally and in fact reproduces the approach of regional officials from recent years. CPJ is recognized as a non-research and non-innovation institution that is instead focused on teaching and, to some extent, applied research. Currently, the innovation strategy is just beginning to be implemented, albeit hesitantly. For example, the Regional Innovative Office has introduced entrepreneurial vouchers for small and mid-size firms, but the effectiveness of this measure is doubtful. Another regional strategic plan (from 2015) defines the overall priority as achieving "a competitive economy and employment," which includes the sub-priority of "science, research and innovation" (Regional Office, 2015), in which CPJ again plays a minor role.

Conclusion

To interpret the graduate paradox, one should take into account CPJ's extraordinary position within the Czech higher education system. First, it is a new, non-university vocational type of public HEI. On the one hand, CPJ must define this specific form of HEI and explain it to stakeholders.²² On the other, it has yet to form its own identity. Second, CPJ is located in a region where no tradition of higher education had existed before. The broader regional public and all involved actors are just

becoming aware of what a HEI is and what it means to have one in the region. Finally, CPJ is a rather small educational institution and its real impact on the regional labor market is limited, even if the focus of its study programs (and graduates) seems to meet the needs of the Vysocina Region. All three mentioned factors—CPJ's relative novelty, the non-existent tradition of higher education in the region, and size of the HEI—have effects on the groups of stakeholders analyzed in this chapter: the central government, firms as potential employers, and regional authorities. From the perspective of CPJ officials, they are all important but deserve different levels of attention. Currently, CPJ must cope mainly with one *definite stakeholder*, MEYS, and its requirements. Regional officials (the local government as a stakeholder) do not seem to be particularly interested in developing a partnership with CPJ, and regional employers, who are far from being a homogenous entity, tend to hire workers with secondary education only. The labor market as a whole is still not prepared for an influx of workers with higher education.

We identified three main barriers that influence the graduate paradox. The first and probably most important barrier is the administrative decoupling of the regional government and CPJ caused by the significant centralization of the higher education sector on the country level, which leaves regional governments with almost no official power to influence HEIs located within their administrative borders. In general, the region lacks motivation to deal with CPJ.

The second barrier is conservative and ineffective regional decision-making in promoting innovative strategies and real activities to implement such strategies (e.g., ways to attract new firms to the region or to motivate traditional employers to invest in innovation or improve human capital). One manifestation of this barrier is the region's vague approach to creating regional networks that also include CPJ as an important actor.

The third barrier is caused by the significant change of attitudes of two of the three main stakeholders (MEYS and the regional government) that has occurred since CPJ was founded (as illustrated in Table 4.3). In the early stages of founding this HEI, all the analyzed stakeholders put in great effort at justifying and outlining the benefits of the new HEI for the region. That original synergy of aims resulted in success—a newly established HEI—even though both mentioned stakeholders had, from the

Table 4.3 The evolution of external stakeholders' roles

Stakeholder	During the establishment of CPJ	Currently (after a decade)	What happened? (dynamics)
Regional government	Dominant	Dependent	Past—initiators of establishing CPJ; Currently—non-defined relationship to CPJ (due to weak competencies and unclear regional R & D policy)
Regional employers	Dependent	Dangerous	Past—collaboration on developing study programs, including traineeships; Currently—focus on employees with secondary education, very limited number of positions for the tertiary educated
Central government: the Ministry of Education, Youth and Sport	Definitive	Definitive	Past—establishing new HEIs was a national trend, research at HEIs was not prioritized; Currently—new amendment to Act on Higher Education, new strategic plans, funding focused on excellence in research (following EU-wide trends)

very beginning, principally different reasons for wanting to establish an HEI. In the process of establishing CPJ, regional officials originally had great power and ambitions, which were eventually lost when they realized they had little power over the functioning of the HEI. The original intention of MEYS was to allow the creation of new HEIs without much regard to their academic focus, but currently, the general strategy of MEYS is to give greater priority to research. Among other things, this attitude shift is reflected in the framework for HEI funding: the graduate employment rate is indubitably an important indicator relevant for HEI funding for teaching.

The employment rate of CPJ graduates is well below the country average, and therefore the college has a strong motivation for changing this trend. Due to CPJ's "problematic circumstances" (its short existence and the fact that it is a small, non-traditional institution with limited influence on the region), such changes can only be made in close cooperation

with regional stakeholders (i.e., regional officials and firms/employers) and over a long period of time.

Our findings have implications for further research as well as for CPJ as an organization. We are aware of the limitations of our study. There are many questions that should be raised in future research. First, further research should focus more on developing ways to measure graduate employment. Filling this knowledge gap, by having more reliable data about CPJ that would facilitate an assessment of graduate unemployment by field of study, is actually a more general aspiration because reliable data on graduate employment are still lacking in the Czech Republic. This focus should be important not only for researchers but also for regions and CPJ in their decision-making processes. Another important aim of further research should be to analyze regional migration patterns of higher education graduates who have (or had before they started to study at an HEI) residency in peripheral regions. Possible future research questions include the following: what percentage of people who study outside their region of residence come back? Does regional “brain drain” exist? In addition, the actual spectrum of stakeholders is much broader than that presented in this study, and stakeholder interests can vary significantly. Therefore, in-depth analyses of students as important internal stakeholders and graduates as external stakeholders would be relevant for future research.

What implications could our findings have for CPJ’s decision-making process and the formulation of its institutional mission? Although we identified some activities that could help tackle graduate unemployment (i.e., internships, more focus on technical fields, closer cooperation with alumni), overall CPJ seems to be in a difficult situation. As a still very new and small institution, it is having a hard time being taken seriously by the stakeholders we have examined in this study. In addition, CPJ must primarily take into account the requirements of MEYS as a definite stakeholder. Nevertheless, some steps are available for CPJ to take, but they will all require time. One of them is to continue fostering cooperation with the region and regional employers in order to achieve more institutionalized or more formal forms of cooperation. Furthermore, CPJ officials should more actively express and explain the school’s position to

the public, that is, they should, through promotional efforts, systematically convey an image of CPJ as a regional, non-university HEI. The quality of CPJ's study programs could also be improved to cultivate in students skills and abilities that support creativity and an active approach to life and work. These changes would foster entrepreneurship and allow graduates to "make their own jobs."

Notes

1. For more information, see <http://www.perifproject.eu>
2. All the output of the PERIF research project is available at <http://www.perifproject.eu/>
3. All together 14 regions were created, including Prague as a special administrative unit.
4. There were and are only several small branches of HEIs from outside the region located here.
5. As a result of the enactment of the Act on Higher Education in 1998. Whereas in 1999, 23 public HEIs existed, in 2005 there were 25 public HEIs and 36 private ones and in 2009, 26 public and 45 private HEIs (Körner, 2010).
6. *Vyšší odborná škola* in Czech. This is a specific type of educational institution, which in the Czech tertiary system is a de facto vocational college but not a de jure tertiary institution. Such schools are also not as prestigious as HEIs, that is, universities. They do not grant traditional degrees, such as bachelor's or master's degrees, but the "diploma specialist degree" (DiS.).
7. From the Ancient Greek *polytechné*, which means "many arts."
8. For different reasons the German-speaking population, which was located mainly in Jihlava, also disappeared.
9. Potatoes are the traditional agricultural product here. The region's harsh climate is suitable for their cultivation. Historically, more profitable crops could not be grown here.
10. For example, BOSCH Diesel's regional research and development (R & D) center is based in the South Bohemian Region, which neighbors the Vysocina Region to the west.
11. Subregions are smaller units within regions that are centered in a bigger town.

12. CPJ currently provides an education to approximately one-tenth of all students at HEIs who have residency in Vysocina Region. From this perspective, its capacities are still quite small.
13. The first expected graduates of the master's program will receive their degrees in the 2017/2018 academic year.
14. CPJ as an HEI without faculties is not included in this statistic.
15. The Ministry of Labor and Social Affairs publishes graduate employment data.
16. CPJ and the Institute of Technology and Business in České Budějovice.
17. The alumni club's activities focus on workshops for graduates on topics connected with job seeking and supporting work habits; it also facilitates job offers.
18. Regional universities could not effectively exist without the inflow of highly qualified academic staff, such as associate professors and full professors, because regulatory conditions do not allow such institutes to grant high-ranking academic titles themselves. On the other hand, the presence of such academics is required to guarantee a study program's accreditation. If a qualified staff member leaves, the HEI may lose its accreditation if it cannot quickly find a replacement. Similar problems occur when an HEI wants to open up new educational programs that address regional conditions.
19. The University of Chemistry and Technology in Prague spends the most on research in relative figures; more than one-third of its budget goes to research. At Charles University, Czech Technical University, and Palacký University Olomouc (UPOL) one-fourth of expenditures are on research activities. However, less than 1% of CPJ's budget is allocated for research. (These figures are based on our own calculations made using data drawn from these HEI's annual reports).
20. Nevertheless, criteria for distinguishing between academic and professional study programs have not yet been developed. The newly established National Accreditation Office will have to carry out this crucial task.
21. The *Regional Innovation Strategy* is the first document of its type in the Vysocina Region; the central government demanded it be created in order for the region to draw European funds.
22. CPJ is one of only two public non-university HEIs in the Czech Republic. The second one is the Institute of Technology and Business in České Budejovice.

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