

# **Silicon Valley in Eastern Slovakia? Neoliberalism, Post-Socialism and the Knowledge Economy**

**Europe-Asia Studies, Volume 65, Issue 7, 2013**

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## **Abstract**

The essay critically examines the prospect of emulating a Silicon Valley-style regional development in the post-socialist context of East-Central Europe. It underlines the problematic nature of the Silicon Valley concept itself and examines the way in which the concept has been 'domesticated' in Košice, a peripheral region in eastern Slovakia undergoing a painful post-socialist transformation towards the market economy. In doing so, the essay also highlights links between neoliberalism, post-socialism and the knowledge-based economy.

SILICON VALLEY HAS LONG BEEN RECOGNISED AS AN 'icon of success' (Markusen 1999a, p. 880)—a symbol of US technological and economic superiority. More specifically, Silicon Valley is often considered as being synonymous with a 'high-tech', high added-value, highly innovative, post-industrial, knowledge-based and highly successful regional economy (Leadbeater 2000, p. 167). In turn, for many policy makers, the concept of Silicon Valley represents the 'best practice' in regional economic development in the West (Pike et al. 2006). Numerous regions around the world have tried to imitate Silicon Valley and its purported success. Such efforts are particularly interesting in Central and Eastern Europe, not least because the former state-socialist economies are often claimed to have failed due to the lack of Silicon Valley-style innovation.<sup>1</sup> But can Silicon Valley be replicated in post-socialist Eastern Europe?

This essay examines the concept of Silicon Valley and its applicability in Central and Eastern Europe from a critical perspective. First, the essay scrutinises the concept of Silicon Valley itself. Rather than accepting Silicon Valley as an unproblematic, taken-for-granted (neoliberal) concept that can be readily exported elsewhere, the essay problematises the concept by exposing its contentious nature. In particular, the essay highlights the fact that Silicon Valley—perhaps the best known regional policy 'export' of the supposedly neoliberal America—can itself hardly be seen as a product of neoliberalism.

Second, the essay examines the way in which the concept of Silicon Valley has been adopted in post-socialist East-Central Europe. Using a case study of Košice, a peripheral region in Eastern Slovakia, the essay underlines the problematic nature of such efforts. A detailed study of the 'Košice IT Valley' initiative highlights the challenges of building a knowledge economy in the context of post-socialist (neoliberal) transformation.

Finally, the essay considers intricate links between neoliberalism, post-socialism and the knowledge economy. In doing so, it aims to contribute to the debate on 'domesticating' neoliberalism in the post-socialist context (Smith & Rochovská 2007), while focusing at the regional scale. The essay argues that the lessons from the peripheral region of Košice highlight some core issues and tensions within and between the three concepts.

### **Problematising Silicon Valley**

The spectacular transformation of Santa Clara Valley in California, USA, into a world-leading technology region that now spreads around the entire San Francisco Bay, has long been capturing the imagination of policy makers, business leaders and academics alike. However, despite its world fame, the causes behind the success of Silicon Valley remain disputed. Several theoretical accounts exist.<sup>2</sup>

For the purpose of this essay, three broad perspectives are identified. The first places an emphasis on markets, the second on networks and the third on the state. The first perspective corresponds to a neoliberal logic. From this perspective the success of Silicon Valley can be seen as a reflection of heroic individual entrepreneurs, fierce competition between firms and unfettered markets, all of which is acting to support innovation and economic dynamism.

The second perspective emphasises cooperative networks, collective action and the local institutional environment which lubricates the process of innovation. The best example of this approach is the work of Annalee Saxenian (1996) who insists that 'while competitive rivalries spurred technological advance among local producers, the regional economy [of Silicon Valley] was far from the simple free market of economic theory' (Saxenian 1996, p. 44). Indeed, while she recognises the individual heroism of local entrepreneurs competing on the market, she places much emphasis on 'supportive social structures, institutions, and collaborative practices' which provided a framework for 'mutual learning and adjustment' (Saxenian 1996, p. 44). Saxenian argues that the dynamism of Silicon Valley resulted from a regional network-based industrial system where 'companies compete intensely while at the same time learning from one another' (Saxenian 1996, pp. 2-3).

The network perspective is echoed in a large body of literature on regional economic development and reflected in concepts such as 'regional innovation systems' (Braczyk et al. 1998), 'clusters' (Cooke 1998), 'learning regions' (Florida 1995; Asheim 1996; Morgan 1997), 'untraded interdependencies' (Storper 1997) or 'triple helix' (Etzkowitz 2001).<sup>3</sup> The network logic also permeates the work of Manuel Castells (1996, 1998) who argued that the society of the new information age is in essence a 'network society'. Castells himself considers Silicon Valley as the 'most notorious seedbed of innovation' of 'the information technology revolution in America' (Castells 2000, p. 62) which is behind the emergence of the network society. The network logic is, however, very different from the logic of markets. Even if we would accept that Silicon Valley is a

combination of both markets and networks, it would be difficult to describe the Valley as 'neoliberal'.

This point is further reinforced when considering the third perspective on Silicon Valley—one that recognises the role of the state and the wider political economy in shaping high-technology regions in the USA. In particular, such an alternative links the unparalleled growth of the Valley with the US Federal Government multi-billion dollar defence and aerospace contracts (the role of which is acknowledged, but downplayed, by writers such as Saxenian).

What is important to recognise here is that US government spending in this area is related to a particular geopolitical context—that of a Cold War confrontation between the USA and the USSR. There is plenty of evidence to support this view. Lyon (1988), for example, provides cogent examples of the links between the 'Soviet threat' and US military build-up during the Cold War, giving birth to technologies that are today routinely associated with the 'knowledge-based economy' or 'information society'. In particular, the development of information and communication technologies (ICT) can be traced back to US defence-related efforts in the 1950s, to 'outgun' and outsmart their arch-rival, the Soviet Union. As Lyon (1988, p. 28) remarks, the 'world-renowned Silicon Valley in California had its genesis at this time'.

Indeed, the emergence of Silicon Valley—an 'icon of success' (Markusen 1999a, p. 880)—can be seen as a by-product of generously funded US defence programmes (Markusen et al. 1991), which continued even after the end of the Cold War. According to Markusen, Silicon Valley is the fourth largest recipient of military spending contracts in the USA (Markusen 1999a, p. 880, 1999b, p. 118) amounting to \$5 billion annually even in the 1990s (Markusen 1999a, p. 879). It could be argued that military spending (which remains high especially in the UK and USA (Lovering 1998; Markusen 1999a, p. 880)), in fact represents a form of 'industrial policy' (Sandler & Hartley 1995), of which Silicon Valley is one of the beneficiaries. Thus, while the USA has been promoting neoliberalism around the world, it has been, for decades, operating a form of 'military Keynesianism' (Sandler & Hartley 1995) on its own soil, giving US high-technology sectors and clusters an unparalleled boost and competitive advantage. More generally, this highlights an important role the state can play in fostering innovation and technological development (Sandler & Hartley 1995; Archibugi et al. 1999), and fostering what some observers see as the rise of the 'knowledge economy' or 'learning economy'. These findings further undermine the notion of Silicon Valley as a 'neoliberal' concept.

However, it is important to note that despite the huge amounts of public spending underpinning Silicon Valley, it is questionable if the Valley can be seen as offering 'best practice' in regional development. Indeed, beneath its gloss, world fame and the image of economic success, Silicon Valley is characterised by significant spatial and social inequality, racial divisions, exploitation and job insecurity (Castells & Hall 1994; Pike et al. 2006, pp. 217–19). Furthermore, while the Valley has shown a great deal of economic resilience (perhaps also thanks to the great deal of federal government funding mentioned above), it is by no means immune from economic downturns and crises. It is therefore open to

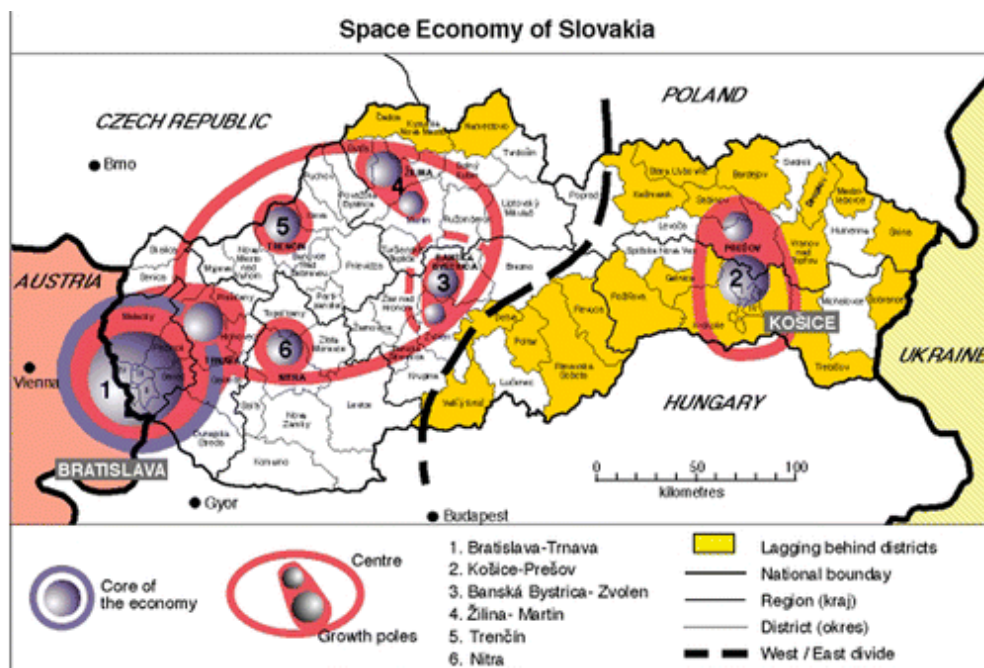
debate whether Silicon Valley is, in fact, a 'model region' worth following. Regardless of this, Silicon Valley continues to attract attention from around the world and countless attempts are being made to reproduce its 'success'. One such attempt involves the Košice region in Eastern Slovakia, to which we now turn.

## Building Silicon Valley in Eastern Slovakia

### Post-socialist transformation and regional development in Eastern Slovakia

Eastern Slovakia was, historically, the least developed part of Slovakia and of the former Czechoslovakia. Until World War II, the area was characterised by poor standards of living, high unemployment and high rates of emigration. Under state socialism, alongside other underdeveloped regions, Eastern Slovakia was targeted by socialist planners for major social and economic development, mostly through the process of 'forced industrialisation' (Smith 1998). A predominantly agrarian economy was transformed over several decades into one of the most important industrial centres of Slovakia. A flagship investment of this industrialisation strategy was the construction of the East Slovak Steel Works (Vychodoslovenske Zeleziarne—VSZ) on the outskirts of the city of Košice. Since industrialisation in Slovakia was linked to armaments production (Smith 1994, 1998), it could therefore be argued that Košice's industry was part of the Soviet military machine and thus an integral part of the 'Soviet threat' mentioned earlier—a perceived threat which the Californian Silicon Valley thrived on during the Cold War. Importantly for Eastern Slovakia though, major investments were also made in health, education and research & development (R&D) infrastructure, while local universities underwent major expansion. Reflecting these investments during the state-socialist period, the region experienced a rapid pace of development within a framework of overall regional convergence in post-war Czechoslovakia (Pavlínek 1995; Smith 1998).

However, following the collapse of state socialism in 1989, the region of Eastern Slovakia was among the regions that were hardest hit by the neoliberal 'transitional' shocks. The collapse of industrial production and the disintegration of socialist agriculture had devastating effects on regional output and employment. Eastern Slovakia quickly became the most problematic area of the newly independent Slovak Republic (after Czechoslovakia de-federated in 1992). The region found itself on the losing side of the historical East–West divide which re-emerged within the increasingly polarised economic geography of Slovakia during the post-socialist transformation (Smith 1996, 1998; Sokol 1999), while the cities of Košice and Presov provided perhaps the only major growth poles in the East (see Figure 1). Following a series of administrative reorganisations in the 1990s, the Košice region emerged as a fully-fledged self-governing region in the early 2000s. The Košice region, together with the neighbouring Presov region, have faced some of the toughest economic challenges in the country.



[View larger version \(344K\)](#)

Figure 1 East–West Divide in Slovakia.

Source: Sokol (1999).

Eastern Slovakia in general, and the Košice region in particular, is still recovering from a painful restructuring, during which most industries were privatised and socio-economic landscapes were transformed. The East Slovak Steel Works was bought by US Steel thus securing its continued operation, although with much reduced employment. By 2001, the Košice region had also attracted other important investment projects including Siemens (in Michalovce), Embraco (in Spisska Nova Ves), Molex (in Kechnec), SCA Hygiene Products (in Gemerska Horka), Matsushita Electronic (in Krompachy) and Haraco (in Košice).<sup>4</sup> However, while these investments have been generally welcome, they are not a panacea for solving serious economic and social problems in the region.<sup>5</sup>

Indeed, in 2001, after a decade of painful transformation, regional GDP in Košice stood at only 41.3% of the EU-15 average (in purchasing power standard per capita). The corresponding figure for the whole of Eastern Slovakia (Košice and Prešov combined) was 34.8% of the EU-15 average, the lowest of all Slovak Nomenclature of Territorial Units for Statistics 2 (NUTS 2) regions. This contrasts with the 101.8% of the EU-15 average achieved in Bratislava region (SU SR 2004, pp. 18, 53). Thus, while the Bratislava region in the west of the country (see Figure 1) is one of the more prosperous regions of Europe and the second richest region in East-Central Europe after Prague, the Košice and Prešov regions are among the poorest in the EU. This reflects not only a significant divergence in regional development in post-socialist Slovakia (Smith 1996, 1998; Sokol 1999), but also a wider fragmentation of the economic geography of the 'New Europe' more widely (Sokol 2001). One of the most serious manifestations of this economic marginalisation of the Košice region has been a high level of

unemployment, which in 2005 stood at 17.5%—the second worst in the country and well above the national average of 11.4% (see Table 1).

Data table

Table 1 Unemployment in Slovakia in 2005

TABLE 1  
UNEMPLOYMENT IN SLOVAKIA IN 2005

<i>Slovak Republic/NUTS 2/NUTS 3 regions</i>	<i>Total population (Persons)</i>	<i>Economically active</i>			<i>Job applicants (Persons)</i>	<i>Registered unemployment rate (%)</i>
		<i>population (Persons)</i> <i>(Thousands)</i>	<i>Employed (Persons)</i> <i>(Thousands)</i>	<i>Unemployed (Persons)</i> <i>(Thousands)</i>		
<b>Slovak Republic in total</b>	<b>5,387,285</b>	<b>2,645.7</b>	<b>2,216.2</b>	<b>427.5</b>	<b>293,801</b>	<b>11.4</b>
Bratislavský kraj (Bratislava region)	602,433	330.5	313.5	17.1	8,235	2.6
Západné Slovensko (Western Slovakia)	1,863,409	930.3	814.0	115.4	79,323	8.6
Trnavský kraj (Trnava region)	553,768	289.1	258.5	30.1	20,210	7.2
Trenčiansky kraj (Trencin region)	600,904	295.2	271.1	23.9	20,304	6.8
Nitriansky kraj (Nitra region)	708,737	346.0	284.4	61.4	38,809	11.4
Stredné Slovensko (Central Slovakia)	1,352,391	658.3	529.9	127.9	86,723	13.8
Žilinský kraj (Zilina region)	694,634	331.6	281.1	50.3	29,657	9.3
Banskobystrický kraj (B.Bystrica region)	657,757	326.7	248.8	77.6	57,066	18.3
Východné Slovensko (Eastern Slovakia)	1,569,052	726.8	558.9	167.1	119,520	16.6
Prešovský kraj (Presov region)	797,692	373.7	292.8	80.1	57,577	15.8
Košický kraj (Košice region)	771,360	353.1	266.1	87.0	61,943	17.5

Source: Compiled by the author from SU SR (2007, pp. 32–33, 78–79, 112–13).

It is in this context that the region saw the arrival of several IT service firms, including T-Systems, NESS and Microsoft, in part secured by state investment incentives. T-Systems, for example, was supposed to receive 147 million Slovak koruna (about €4.88 million) from the Slovak government (Sobinkovič 2007). IT News (2009) reported, however, that T-Systems received two state subsidies of €13.53 million, on the top of tax concessions stretching until 2012 to the tune of €3.35 million. The hopes among policy makers are that IT companies such as T-Systems will open the door to a new service economy and create much-needed employment in Košice. T-Systems has also played a key role in establishing 'Košice IT Valley', an initiative which aims to create a Silicon Valley in Eastern Slovakia.

This initiative will be examined drawing on 15 interviews with key regional actors. The majority of interviews were undertaken face-to-face in Košice in October 2007. The interviewees included the President of the Košice Self-Governing Region; key regional development policy makers; representatives of a leading regional think-tank; a local development agency; members of the academic sector (including the president of one the local universities); and

representatives of IT firms (including a managing director of the biggest IT firm in the region). Out of 15 interviews, seven were conducted with key players directly involved in the Košice IT Valley association including its former managing director; chairman of the Board of Directors; members of the Board of Directors; and a member of the Board of Supervisors. The timing of the interviews (in the early phase of the association's development) allowed first-hand insights from the key players into the factors and motives behind the association's creation. These insights were complemented by an analysis of policy documents, media releases and press articles.

### The emergence of Košice IT Valley

The 'Košice IT Valley' initiative started with an informal meeting between a senior academic (and later the President of the Technical University of Košice) and a senior representative of T-Systems, an IT company whose decision to open an operation in Košice caused some 'excitement' in the region.<sup>6</sup> Shortly after this crucial meeting, an 'IT Valley Development Forum' was founded in January 2006, facilitated by the Technical University of Košice. A year later, in early 2007, the Forum was transformed into a formal association—a 'partnership of legal entities' under Slovak law—under the name of 'Košice IT Valley'. Among the 10 founding members were two local universities (the Technical University of Košice and the University of P. J. Safarik in Košice), the Košice Self-Governing Regional Authority and a group of IT firms with operations in the region, namely T-Systems, NESS, Siemens, VSE IT, Cisco, Microsoft and Slovak Telecom.<sup>7</sup> Without exception, all seven founding firms were involved in IT services (as opposed to IT manufacturing), foreign-owned and part of larger multinational corporations (as opposed to local start-ups). Within the first year of its operation, the membership of the association grew to 15. By 2012, Košice IT Valley had 23 members, of which 16 were IT firms (see Table 2). In the meantime, the association became a flagship IT initiative in the region and in Slovakia, attracting the attention of the local and national press (Trend 2006; Balogová 2007; Farbiaková 2007; Košický Korzár 2007; Sobinkovič 2007; IT News 2007, 2009; Buzinkay & Vašuta 2009).

Table 2 Membership of Košice IT Valley (as of 2012)

TABLE 2  
MEMBERSHIP OF KOŠICE IT VALLEY (AS OF 2012)

<i>Member</i>	
1.	BEST TU Košice (Board of European Students of Technology, Technical University Košice)
2.	Cisco Systems Slovakia, s.r.o.*
3.	elfa, s.r.o.
4.	Elcom, s.r.o., Prešov
5.	Icos, a.s. Košice
6.	IEEE Student Branch at Technical University of Košice
7.	Ixonos Slovakia, s.r.o.
8.	Košice Self-Governing Region*
9.	Microsoft Slovakia, s.r.o.*
10.	Municipality of Košice
11.	Ness KDC, s.r.o.*
12.	New Horizons (CLAALL, s.r.o.)
13.	PROCESNÁ AUTOMATIZÁCIA a.s. Košice
14.	RWE IT Slovakia, s.r.o.
15.	Siemens Program and System Engineering, s.r.o.*
16.	SORS Research, a.s.
17.	Stredná priemyselná škola elektrotechnická, Košice
18.	Technical University Košice*
19.	Telegrafia, a.s.
20.	T-Systems Slovakia, s.r.o.*
21.	University of P. J. Šafárik, Košice*
22.	VSE IT služby, s.r.o.*
23.	VSL Software, a.s.

*Note:* \* Founding member; s.r.o. *spoločnosť s ručením obmedzeným* (limited company, Ltd); a.s., *akciová spoločnosť* (public limited company, plc.).

*Source:* www.kosiceitvalley.sk, accessed 27 March 2012.

In part, this media attention was helped by (and in turn helped to reinforce) the symbolic connection between Košice IT Valley and its ‘role model’, Silicon Valley.<sup>8</sup> The adopted name of the association, Košice IT Valley, is a clear reference to its famous US counterpart, although it is unclear who chose the name; according to one key actor (who proudly displays a poster of Silicon Valley on the wall of his office) the name ‘was there from the beginning—Silicon Valley—Košice IT Valley ...’.<sup>9</sup> The managing director of T-Systems Slovakia, and one of the key players in the Association, Jozef Ondáš, explicitly referred to ‘Košice Silicon Valley’ as an idea that ‘has motivated many experts and professionals to create a strong community able to support information and communication technologies of global companies’ (City of Košice 2010, p. 27). As a Slovak business weekly magazine *Trend* argued, the association’s name is a reminder of its ‘ambition to create a small Eastern Slovakian version of the famous American Eldorado of technology companies Silicon Valley’, implying that the spirit of Silicon Valley is not only present in the association’s name, but also in its objectives (Sobinkovič 2007). According to another key player and a founding member of the association, the name ‘Košice IT Valley’ is perhaps rather ‘bold’, since it evokes the Silicon Valley with which Košice cannot compete, ‘but then again, if you don’t have bold objectives then you cannot start fulfilling them’.<sup>10</sup>

The objectives of Košice IT Valley association are indeed ambitious. The official aim of the association is to create a ‘centre of excellence of ICT’ and to build an ‘information and knowledge society’ in Eastern Slovakia (Košice IT 2010). The association claims to foster conditions for socio-economic development, education and jobs, and for research and development of ICT in the region. Strategic statements by the association also explicitly mention ‘knowledge economy’, ‘information society’ and the concept of the ‘learning region’ among its



aims, alongside efforts to 'create a business-friendly environment that would stimulate all forms of innovation' (Košice IT 2010). The vision of Košice IT Valley is to 'create a regional partnership of IT firms, universities and self-government' that would help to improve educational programmes, create jobs for a highly-qualified workforce and prepare a joint strategy for 'bringing prosperity into the region of Eastern Slovakia and for gradual improvement of quality of life of its inhabitants' (Košice IT 2010).

It remains to be seen to what extent Košice IT Valley will achieve these objectives. The process of putting together a network of players to form the association and to make it work was, in itself, a 'long thorny road'<sup>11</sup> and it was 'not very simple, because everybody has their own interests'.<sup>12</sup> Perhaps because of the challenges it has faced, this is so far the only regional association of its kind in the country. In the words of one of the key players, Košice IT Valley is an 'unprecedented association ... nothing like this exists [elsewhere] in Slovakia'.<sup>13</sup>

There are at least two reasons why the initiative can be seen as unique. Firstly, Košice IT Valley managed to bring together 'professional firms that are in competition [with each other]'; firms that are 'classic rivals on the labour market'.<sup>14</sup> The IT companies involved had to overcome their positions as market competitors and to engage in some sort of cooperation. One of the key players in the association described the experience of participating firms as follows: 'As it transpired, it was not so frightening for them [competing firms] to sit around the table. Quite the opposite!'.<sup>15</sup> Secondly, Košice IT Valley is unique in Slovakia because it brought together representatives of regional government, local universities and the private sector. As one of the key actors proudly stated: 'We have also fulfilled the idea of the classic "triple helix", the triangle where local or regional governance structures, universities and the private sector come together to undertake important activities. That's the famous concept of the "triple helix". And we have managed to implement it ...'.<sup>16</sup>

Despite the challenges faced, the actors in this emerging 'triple helix' seem to be appreciative of the mutual cooperation which is developing between them. A senior figure within the association (a managing director of one of the key IT firms involved) considered the cooperation with universities was 'excellent' and a 'model cooperation'.<sup>17</sup> Further, '... the [Košice self-governing] region is helping us a lot. The region is making efforts ... they show political and societal support which pushes us forward a lot'.<sup>18</sup>

Thus, what has emerged in Košice is a collaborative network structure which, it can be argued, goes beyond the purely neoliberal competition-based market order. Given that such a partnership has indeed no equivalent elsewhere in the country, it is pertinent to ask what made this achievement in Košice region possible.

#### Factors and motives behind the creation of Košice IT Valley

One important factor behind the mobilisation of actors in the Košice region is related to the devastating effects (neoliberal) marketisation had on the region.<sup>19</sup> As seen from the economic indicators presented earlier, the Košice region found itself on the losing end of post-socialist economic transformation in Slovakia. As

observed by a representative of the regional self-government: 'Among all Slovak regions this region was hardest hit by the restructuring of industry after 1989'.<sup>20</sup>

Facing unprecedented challenges and left to their own devices, key regional players realised that only through the increased cooperation between them could they, against the odds, seize whatever opportunities arose. This meant that their partial interests, their rivalries and competition had to be overcome. Some interviewees recalled the arguments that were used when consensus was being forged around the creation of Košice IT Valley: '[At a meeting one of the players said:] "competition will not help us! It will not help us!" [while adding:] "everybody let's put together the best we have"'.<sup>21</sup> Another interviewee recalled that one of the partners argued that 'the highest form of competition is cooperation'.<sup>22</sup> This was echoed by one of the business leaders: '[T]he motto of the [Košice IT Valley] is "let's not compete, let's cooperate"—so that we can increase the size of the cake together and then we can slice it'.<sup>23</sup> This last quotation also reveals a rather specific, yet very important motive behind the creation of Košice IT Valley—the need to expand the number of IT professionals in the region. The viability and a potential expansion of locally operating IT firms is critically dependent on the availability of labour with suitable IT skills (Sobinkovič 2007).

While local universities had been providing a stream of IT-skilled graduates before Košice IT Valley was born—Košice being a 'university town' was clearly one of the factors for IT firms to locate in the region in the first place (Farbiaková 2007)—it soon became clear that there was a certain mismatch between the outputs of the educational sector and the requirements of local firms. According to one interviewee, the education system moves in a 'phase lag' and so there is a 'massive gap' between the educational output and the real needs of the regional economy.<sup>24</sup> These views were echoed by other interviewees, for example, those interviewed from IT firms).

The gap can be expressed both in terms of quality and quantity. Around the time of the creation of Košice IT Valley, local universities were producing about 200 IT specialists per year (Sobinkovič 2007; Buzinkay & Vašuta 2009), while the needs of the local IT sector was estimated at about 600 graduates per year—or 3,000 people over the next five years.<sup>25</sup> NESS Slovakia, for example, wanted to expand from its then 100 employees to 300 or even 500 people (Sobinkovič 2007). In fact, according to the Managing Director of NESS 'if we had even 2,000 employees, we would be able to find a job for them too' (Sobinkovič 2007). Large increases in the numbers of employees were also expected at T-Systems (Trend 2006). Overall, the representatives of Košice IT Valley were aiming to double the number of IT experts in the region from 3,000 to 6,000–7,000.<sup>26</sup>

Thus, the creation of the Košice IT Valley association was also driven by the need to produce larger numbers of better prepared graduates for the needs of IT firms operating in the region. For these firms, Košice IT Valley is a perfect vehicle for improving and enlarging the labour pool. As one interviewee commenting on the factors behind the successful creation of the Košice IT Valley association observed: '... all those [IT] firms simply need people and so they are trying to find

a way to access universities and education. This is one of the ways'.<sup>27</sup> Consequently, one of the key objectives of the association when it was set up was to speed up the process of the preparation of a suitably trained pool of workforce for IT firms. This remains one of the association's 'priority aims'.<sup>28</sup> While cooperation with local universities is starting to bring benefits, IT firms have also designed their own IT training courses. According to one of the key business leaders, he actively entered the process because he 'needed to accelerate the development of the IT community'.<sup>29</sup>

All these efforts clearly have had some impact. It has been reported in the association's 2007 Annual Report that within a short period of time since the foundation of Košice IT Valley the employment levels in key IT firms increased dramatically by over 900 people—of which 700 were employed in T-Systems, 100 in NESS, 60 in IXONOS and 50 in VSL Software (Košice IT 2008, p. 4). T-Systems became the largest IT employer in the region growing from zero in 2006 to about 1,500 employees in 2009 (IT News 2009), with further expansion planned—undisturbed by the global economic crisis—to up to 2,500 employees (Buzinkay 2009).

The importance of preparing a suitable workforce is acknowledged by other partners of the 'triple helix' as well. Indeed, as a senior representative of the Technical University of Košice explained, the higher education sector has a responsibility to address the issue:

The role of the university is incredibly important, because we have to be flexible and adaptable with respect of the labour market needs ... [of course], the mission of the university is not to adjust itself to any single firm. However, the truth is that our students must be flexible and adaptable for the job opportunities that are available in this region.<sup>30</sup>

IT firms operating in Košice have been active in helping local universities to achieve these objectives. They have been shaping the educational process by investing generously in the IT laboratories at local universities, equipping them with the state-of-the-art technology,<sup>31</sup> and providing much valued input into teaching.<sup>32</sup> Praising the involvement of people from the IT industry in the education process, a representative of a local university argued that 'the contribution of such people is unequivocal and concrete'.<sup>33</sup> The challenge goes beyond the higher education sector, however. Several interviewees stated that the issues need to be addressed at the secondary school level too and conscious efforts have been made by the Košice IT Valley association to draw secondary schools in the region into the process.<sup>34</sup>

#### Narratives, visions and challenges of regional transformation

All activities of Košice IT Valley are framed within a narrative and a vision of creating a 'knowledge economy'. This echoes the EU-wide objectives set by the so-called Lisbon agenda (European Union 2000) which in itself could be seen as an EU response to the perceived strengths of dynamic and innovative US economy as exemplified by Silicon Valley. Practically all actors interviewed in Košice see the future of the region as being associated with an innovating, high value-added, knowledge-intensive economy and several interviewees used the

notions of the 'intelligent region', 'learning region' or 'knowledge region' to describe their visions for the region. As one of the interviewees suggested, the regional economy should be 'more based on research and development' which is where 'some sort of transformation of the economy should happen'.<sup>35</sup> As noted earlier, 'knowledge economy', 'information society' and 'learning region' are among the terms used to describe the official objectives of Košice IT Valley. Central to these narratives is a shared recognition that young educated people are the key for achieving these visions. As one interviewee cogently put it:

We cannot sit and wait for an oil well to emerge here. Our only riches are ... young educated people. ... Nothing else will produce wealth in this country. And this is even truer for the regions that are far away from the centre, from Bratislava. If there is anything we can do to develop this region then it must be that we turn it into an 'intelligent region'. ... Really, I do believe that the intelligence of this region and its educated people are the guarantors that this region will not only survive ... but will develop, will be dynamic and will move forward. This is what it is all about.<sup>36</sup>

However, all regional actors realise that the riches of the region—young educated people—have all too often been voting with their feet, leaving the region as they are unable to find satisfactory employment opportunities locally. As a senior representative of a local university admitted: 'graduates have been leaving the region and the crucial reason for it was the fact that there weren't enough job opportunities available in the region'.<sup>37</sup>

Much of the strategic narrative therefore revolves around the need to create conditions for young people, especially university graduates, to stay in the region. Most interviewees pin their hopes for reversing the regional fortunes on a further development of the IT sector in general and of Košice IT Valley in particular. These hopes are in part derived from the aforementioned expectation of the expansion of the IT sector in Košice region by doubling the number of IT workers from about 3,000 to 6,000 people. According to one interviewee, 'this is an interesting figure for this region' while emphasising that 'what is important is not only the numbers, but that the numbers will be made up of good people, well educated and skilled'.<sup>38</sup> In other words there is a hope in the region that those employed within the IT sector 'will definitely belong to the group of people in this region with the salaries higher than the rest'.<sup>39</sup> This view is echoed by other players:

It is very good for our self-governing region that Košice IT Valley is here and that this region is becoming an 'intelligent region' because, in essence, a commodity starts to be created here which has a high value-added, where salaries are at a higher level and where services are purchased within higher cost categories. ... It is good to have such an industry here.<sup>40</sup>

The Košice Self-Governing Region very much supports the process and would like to see IT firms 'taking deeper roots in the economic system of the city and the region ... so that young people stay here and do not go abroad'.<sup>41</sup> The region is also prepared to use its powers and influence to encourage changes in the educational system (both in secondary schools and universities) so that it prepares 'tailor-made' people for IT firms in the region.<sup>42</sup>

However, the difficulty with such a (supply-side) strategy is that it cannot guarantee that either workers or IT jobs will actually stay in the region. Indeed, within the neoliberal framework that offers a greater geographical mobility of the economic activities of multinationals, there is a danger that, in the future, existing IT jobs may be relocated from Košice to cheaper locations elsewhere. Vulnerability to such relocation may be dependent on many factors, one of which is the type of work undertaken in a given locality. In this context, it was pointed out by one of the interviewees that, although the jobs offered by IT firms in the region are relatively good and are definitely 'better than digging trenches', they will hardly support the aspiration of boosting research and development in the region. These jobs, it was argued, may therefore be vulnerable to relocations further east as soon as salary levels in the region rise.<sup>43</sup>

This is an important issue for the region. It is known that IT services '[are] being commoditised and standardised as any other activity'<sup>44</sup> and they are therefore probably more mobile too. Local business leaders themselves refer to some of their operations in the region as 'IT operation factories'<sup>45</sup> which operate, administer and manage the hardware and application infrastructures of the parent companies and their corporate clients (Sobinkovič 2007; Farbiaková 2007). T-Systems' operation in Košice (the parent company being Deutsche Telekom of Germany) was described as a 'typical near-shore' operation with clients mostly in western, central and northern Europe (and some further afield), but with no clients in Slovakia.<sup>46</sup> Therefore, apart from critical reliance on the local labour market, there are few local economic linkages. This is a long way from the kind of local inter-firm networking that is supposed to be behind innovative clusters such as Silicon Valley.

However, the hopes of those involved in the Košice IT Valley association are that after reaching a certain size—a critical mass—the cluster of IT firms in Košice will become self-perpetuating. This notion of a critical mass forms an important element in the narrative about the future of Košice IT Valley. Indeed, one of the key players in the association suggests that if the cluster reaches 6,000–7,000 people it will form a 'critical mass' with its own 'gravitational force'.<sup>47</sup> Another interviewee used the analogy of a 'snow ball'<sup>48</sup> that will attract more and more activities. There are hopes that this will make the emerging cluster more resilient to relocation elsewhere. Furthermore, it is believed that the expected expansion will encourage a greater diversification of IT activities, release the creative power of the IT community from spin-off companies and generally improve research intensity and value creation. In other words, Košice would be closer to becoming more like a 'learning region' or a 'proper' Silicon Valley region.

However, it is also clear that there are formidable challenges to the transformation of Košice region into a 'true' Silicon Valley of Eastern Europe. One of the features of learning regions is their ability to foster innovation through effective research and development (R&D). An important element in this process is a synergy between academic research and regional businesses, which ensures rapid application of the latest research into innovative products and services. While many interviewees would agree that the basic R&D infrastructure in Košice region 'is not that bad'<sup>49</sup> they would also point out that

the links between academic research and the regional economy are rather weak.<sup>50</sup> In other words, there are 'solid fundamentals' in terms of universities and research institutes, but the problem is that 'the whole system is vertically managed' and that 'horizontal linkages at the level of the region are missing'.<sup>51</sup> The weakness of these horizontal linkages is, in part, the legacy of the old state-socialist system: 'It was always like that. Even in the old days, during socialism, here we had our science, here we had our enterprises and everybody worked in their own sector and everybody was financed separately and in essence it was difficult to translate basic research into applied research'.<sup>52</sup>

However, as one of the respondents pointed out, cooperation between firms and academia is a challenge everywhere, not only in Košice. There is a different way of thinking and a common language is missing, which creates a 'rather big barrier'.<sup>53</sup> The difficulty is that the new economic system does not automatically support the creation of the desired linkages either, as noted by some interviewees. In part, this is simply because there is a lack of demand for R&D services among both local businesses and foreign multinationals operating in the region. Indeed, while acknowledging that the investment of IT firms may help to maintain a concentration of IT people and activities in the region, one respondent noted, that the 'research is not there'.<sup>54</sup> In his view, firms that opened their operations in Košice did so because of the favourable ratio of the 'labour power and cost' with little demand for academic research.<sup>55</sup> The situation may in fact have 'damaging effects'<sup>56</sup> for the research activities in the region—given that young researchers may be siphoned off from local universities by better-paid, but R&D-free, jobs in IT firms.

More generally, there are concerns that market forces alone will not be able to secure a vibrant regional economy. Indeed, there is a clear sense among some policy makers that the market economy is not helping to overcome the economic difficulties. Quite the opposite: 'The market forces have more negative than positive effects here ... so that we have to make a bigger effort just to keep the pace ... [let alone] to move forward'.<sup>57</sup> There is also a realisation that the region is left to its own devices to cope with the situation. In the absence of strong national regional policy '... we have realised that nobody else will help us ... we have to count on ourselves only. ... Simply put, we have to rely on our own capacity'.<sup>58</sup>

However, the reliance on the region's own capacity is problematic given the substantial financial and institutional constraints within which the self-governing region operates in the context of the neoliberal post-socialist order. Indeed, regional decentralisation in post-socialist Slovakia left self-governing regions with a long list of responsibilities, including education (secondary schools), health (regional hospitals), social care and regional development, while financial resources to ensure the fulfilment of these obligations are rather limited. Self-governing regions are heavily dependent on transfers from the central government (itself under the fiscal squeeze imposed by the neoliberal order). Thus, much of the modest resources received by the region are simply spent on running and maintaining the existing services with 'zero' or 'very little' money left for any regional development projects.<sup>59</sup> The region 'need[s] resources to start changing the situation' on the ground,<sup>60</sup> but currently there is

a 'massive imbalance' between the resources available and the real needs.<sup>61</sup> As one of the interviewees put it, 'we are not short of ideas, but we need money'.<sup>62</sup>

The sense of despair in Košice is further exacerbated by the aforementioned consequences of the post-socialist transformation. There is a feeling among local players that the wellbeing of the region is 'at the behest of resources coming from the national level'<sup>63</sup> since there are limited possibilities to influence the allocation of the EU Structural Funds.<sup>64</sup> The lack of financial resources to support the nascent IT cluster in Košice stands in stark contrast to the billions of dollars that were thrown at Silicon Valley by the US Federal Government throughout the post-war period.

Of course, the Košice IT Valley association stands out as one of the activities that can be carried out locally, but the association itself will need resources to start fulfilling some of its more ambitious aims—especially with regard to fostering research and development. It is unclear where those resources will come from. The self-governing regional authority has few resources to intervene in the economy, let alone to foster knowledge-intensive regional development. Indeed, according to one observer, the self-governing region is 'making efforts' but has 'no means' to influence things like research and development.<sup>65</sup> This also highlights another important impediment, namely an institutional deficit which is quite evident when compared to the situation in the West, where regional innovation systems have been built over decades: 'That whole system, that set of instruments [to support innovation in the West], is in place but we are only building it now!'.<sup>66</sup>

There is a recognition that this institutional deficit needs to be addressed as a matter of priority: 'If we want to enter the knowledge economy, without [those instruments] it's "null points", "forget it"! It cannot work'.<sup>67</sup>

At the moment, however, there does not even seem to be a national consensus about this as a clear tension with the neoliberal agenda emerges:

Some [neo]liberal economists don't like this. [They say that] we don't need industrial policy and that the market will decide. But when I have a look at the USA, I see that they have these policies of competitiveness well developed, both at the central government level and the level of individual states. ...<sup>68</sup>

This last comment finally leads us to consider the intricate connections between neoliberalism, post-socialism and the knowledge economy.

### **Conclusions: neoliberalism, post-socialism and the knowledge economy**

What can be learnt from examining the 'actually existing neoliberalism' in a peripheral region of Slovakia? Obviously, it is difficult to draw any generalised theoretical conclusions from one single case study. However, the case of Košice IT Valley, and the way in which it tries to emulate or 'domesticate' Silicon Valley, exposes some fundamental issues that go to the heart of debates on 'neoliberalism' and its 'domestication' (Smith & Rochovská 2007). In addition, it

also raises important questions about the links between neoliberalism, post-socialism and the knowledge economy.

The first important issue relates to Silicon Valley itself. Clearly there is more than one reading of Silicon Valley. The precise nature of Silicon Valley and the reasons behind its 'success' are subject to conflicting views. The degree to which Silicon Valley can be considered as 'neoliberal' is open to debate. Indeed, if we are to believe Saxenian (1996), then the success of Silicon Valley is more to do with local networking than unfettered markets. Meanwhile, there is also a good deal of evidence to suggest that Silicon Valley is, to a large degree, a by-product of state intervention. One way or another, it is clear that a region located in the epicentre of free-market capitalism, an 'icon of success' of a supposedly neoliberal America, can hardly be described as a (pure) free-market construction. This reinforces the argument that there is 'no such thing as a free market' (Chang 2011, p. 1), and in turn, raises questions over 'the neoliberal' concept itself and the extent to which 'neoliberal' concepts can ever be purely neoliberal, even within the supposedly neoliberal 'homeland' of the US. Indeed, one could argue that the integrity and the meaning of 'the neoliberal' concept disintegrates in the capitalist 'core', even before it is 'exported' or 'translated' into a (post-socialist) 'periphery'. This also destabilises the notion of Western concepts (such as Silicon Valley) as taken-for-granted constructs that can be taken off the shelf and exported elsewhere as a 'best practice'.

Secondly, it may be asked how Western concepts (problematic as they are) are then 'domesticated' in post-socialist contexts. The case of Košice IT Valley and its attempt to 'domesticate' Silicon Valley in Eastern Slovakia highlights several important issues. In particular, the remarkable mobilisation of actors in Košice is linked to the devastating effect that the neoliberal transition from state socialism to a market economy has had in Eastern Slovakia. Indeed, it is in peripheral and marginal spaces—both social (marginalised social groups) and geographical (peripheral regions)—that the negative effects of neoliberalism are often felt hardest, in turn creating opportunities for resistance (Smith et al. 2008), or the emergence of 'coping strategies' or 'survival strategies' (Willis et al. 2008, p. 11). In this context, Košice IT Valley can be seen as a 'coping strategy' on a regional scale.

The extent to which such a strategy can be seen as an alternative to neoliberalism, however, is unclear. On the one hand, by using Silicon Valley as an inspiration, Košice IT Valley can 'import' elements which are clearly not neoliberal—for example the emphasis on cooperation between firms and with public institutions (universities and regional authorities). This could be seen by some as an emergence of governance structures that go beyond the free-market mantra. On the other hand, the nascent regional cooperation in Košice is clearly not happening outside the overall neoliberal framework. Indeed, the 'hollowing-out' of the state has been well under way in post-socialist Slovakia since the collapse of communism, and further deepened in the late 1990s with the advent of the neoliberal 'revolution' (Smith & Rochovská 2007, p. 1168). Within this overall neoliberalising framework, the responsibility for regional development has been progressively passed from the state to the regions—but without providing adequate resources. Increasingly, state intervention in the economy is



limited to creating favourable conditions for foreign investors, with some incentives available in peripheral regions. Such an intervention still matters for regions like Košice, as demonstrated by the case of T-Systems (which subsequently played a key role in creating Košice IT Valley), but the inflow of money that helped Silicon Valley to become the world-leading ICT region is nowhere to be seen in Košice Valley. Regional authorities, meanwhile, have few resources or instruments to support a transformation towards a 'knowledge economy'.

Thirdly, the link between the knowledge economy, post-socialism and neoliberalism is of crucial importance for former state-socialist countries and regions. Indeed, it has been argued that state-socialist economies collapsed due to their inability to innovate and to cope with the informational revolution spearheaded by Silicon Valley (Castells 1996, 1998). Yet, as we have seen, Silicon Valley itself probably would not exist in its current form if it was not for the perceived 'Soviet threat', and the investment of generous US federal resources to address such a threat through defence expenditure. This, in turn, highlights the importance of the role of state in fostering technologies that we routinely associate with the rise of the 'knowledge economy' or 'learning economy' in the West. This echoes the work of evolutionary and institutionalist economists who argued that a successful learning economy is 'neither a pure market economy nor a pure planned economy' (Lundvall & Johnson 1994, p. 41).<sup>69</sup> The idea that a successful innovation process cannot take place easily within the context of a pure market or a pure planned economy has major implications for the debate on neoliberalisation in East-Central Europe. Indeed, it would imply that the kind of post-socialist free-market transformation that has been pushed through in East-Central Europe may not produce the economic dynamism that the enthusiasts of neoliberalism expect. Instead, the fortunes of peripheral regional economies may continue to reflect their position within a much wider international division of labour and the accompanying flows of value. It is hard to see how such a position can be changed without fundamentally changing the wider political economy context.

## Notes

This essay draws in part on a case study of Košice region, the research for which has been undertaken as part of a much larger TRANSFORM Project (No 022780—Benchmarking and Fostering Transformative Use of ICT in EU Regions) funded by the European Commission's Sixth Framework Programme (FP6—Priority 8.1.B.3.5—Information Society Technologies). I would like to thank all my colleagues on the TRANSFORM consortium for their support. In addition to this, I am indebted to all my interviewees in the Košice region who kindly offered their time and shared invaluable insights. Finally, I would like to thank two anonymous referees and the editors of the collection for their comments. Usual disclaimer applies.

1 For example, Castells (1998); see Sokol (2003) for a full discussion.

2 For example, see Pike et al. (2006, pp. 215–17) for a brief overview.

- 3 See MacKinnon et al. (2002), Martin and Sunley (2003) and Sokol (2003, 2004) for a critical appraisal of these concepts.
- 4 See KSK (2002); see also KSGR (2006, pp. 97–103).
- 5 See also Pavlinek and Smith (1998) for a critical perspective on inward investment in the former Czechoslovakia.
- 6 Author's interview with senior academic C, 4 October 2007, Košice.
- 7 Košice IT (2010); see also Geročová (2007).
- 8 For example, see Balogová (2007), Euractiv.sk (2007), Farbiaková (2007), Košický Korzár (2007), Sobinkovič (2007) and Quark (2007); see also City of Košice (2010, p. 27).
- 9 Author's interview with representative of IT firm, 2 October 2007, Košice.
- 10 Author's interview with senior academic C, 4 October 2007, Košice.
- 11 Author's interview with representative of IT firm, 2 October 2007, Košice.
- 12 Telephone interview with senior academic D, 16 November 2007, Košice.
- 13 Author's interview with senior academic C, 4 October 2007, Košice.
- 14 Author's interview with senior academic C, 4 October 2007, Košice.
- 15 Author's interview with senior academic C, 4 October 2007, Košice.
- 16 Author's interview with senior academic C, 4 October 2007, Košice.
- 17 Author's interview with representative of IT firm, 2 October 2007, Košice.
- 18 Author's interview with representative of IT firm, 2 October 2007, Košice.
- 19 See Sokol (2007) for a full discussion of factors.
- 20 Author's interview with regional development policy maker C, 3 October 2007, Košice Self-Governing Region.
- 21 Author's interview with regional development policy maker A, 2 October 2007, Košice Self-Governing Region.
- 22 Author's interview with senior academic C, 4 October 2007, Košice.
- 23 Author's interview with representative of IT firm, 2 October 2007, Košice.
- 24 Author's interview with representative of a regional think-tank, 4 October 2007, Košice.
- 25 Author's interview with representative of IT firm, 2 October 2007, Košice; author's interview with senior academic C, 4 October 2007, Košice. See also, Sobinkovič (2007).

- 26 Author's interviews with representative of IT firm, 2 October 2007, and senior academic C, 4 October 2007, both in Košice; see also Sobinkovič (2007) and IT News (2007).
- 27 Telephone interview with senior academic D, 16 November 2007, Košice.
- 28 Author's interview with senior academic C, 4 October 2007.
- 29 Author's interview with representative of IT firm, 2 October 2007, Košice.
- 30 Author's interview with senior academic C, 4 October 2007, Košice.
- 31 Author's interview with representative of IT firm, 2 October 2007, Košice.
- 32 Author's interview with senior academic C, 4 October 2007, Košice.
- 33 Author's interview with senior academic C, 4 October 2007, Košice.
- 34 Author's interview with representative of IT firm, 2 October 2007, Košice, and telephone interview with senior academic D, 16 November 2007, Košice.
- 35 Author's interview with senior academic A, 2 October 2007, Košice.
- 36 Author's interview with senior academic C, 4 October 2007, Košice.
- 37 Author's interview with senior academic C, 4 October 2007, Košice.
- 38 Author's interview with senior academic C, 4 October 2007, Košice.
- 39 Author's interview with senior academic C, 4 October 2007, Košice.
- 40 Author's interview with regional development policy maker A, 2 October 2007, Košice Self-Governing Region.
- 41 Author's interview with regional development policy maker C, 3 October 2007, Košice Self-Governing Region.
- 42 Author's interview with regional development policy maker C, 3 October 2007, Košice Self-Governing Region.
- 43 Author's interview with senior academic B, 2 October 2007, Košice.
- 44 Author's interview with representative of IT firm, 2 October 2007, Košice.
- 45 Author's interview with representative of IT firm, 2 October 2007, Košice.
- 46 Author's interview with representative of IT firm, 2 October 2007, Košice; see also Sobinkovič (2007) and Farbiaková (2007); see also Pástor (2007) for a brief overview of the IT sector in Slovakia.
- 47 Author's interview with representative of IT firm, 2 October 2007, Košice.
- 48 Author's interview with senior academic A, 2 October 2007, Košice.
- 49 Author's interview with representative of a regional think-tank, 4 October 2007, Košice.

50 Author's interviews with senior academic A, 2 October 2007, Košice; representative of a regional think-tank, 4 October 2007, Košice; and regional development policy maker B, 4 October 2007, Košice Self-Governing Region.

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52 Author's interview with representative of a regional think-tank, 4 October 2007, Košice.

53 Author's interview with senior academic A, 2 October 2007, Košice.

54 Author's interview with senior academic B, 2 October 2007, Košice.

55 Author's interview with senior academic B, 2 October 2007, Košice.

56 Author's interview with senior academic B, 2 October 2007, Košice.

57 Author's interview with regional development policy maker B, 4 October 2007, Košice Self-Governing Region.

58 Author's interview with regional development policy maker B, 4 October 2007, Košice Self-Governing Region.

59 Author's interview with regional development policy maker B, 4 October 2007, Košice Self-Governing Region.

60 Author's interview with regional development policy maker B, 4 October 2007, Košice Self-Governing Region.

61 Author's interview with regional development policy maker B, 4 October 2007, Košice Self-Governing Region.

62 Author's interview with regional development policy maker B, 4 October 2007, Košice Self-Governing Region.

63 Author's interview with regional development policy maker B, 4 October 2007, Košice Self-Governing Region.

64 Author's interview with senior academic A, 2 October 2007, Košice.

65 Author's interview with senior academic A, 2 October 2007, Košice.

66 Author's interview with regional development policy maker B, 4 October 2007, Košice Self-Governing Region.

67 Author's interview with regional development policy maker B, 4 October 2007, Košice Self-Governing Region.

68 Author's interview with regional development policy maker B, 4 October 2007, Košice Self-Governing Region.

69 See also Hodgson (1999).

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