



MINISTERUL ECONOMIEI, COMERȚULUI ȘI  
RELAȚIILOR CU MEDIUL DE AFACERI



# Romania's Tech Ecosystem

Bucharest, 2016

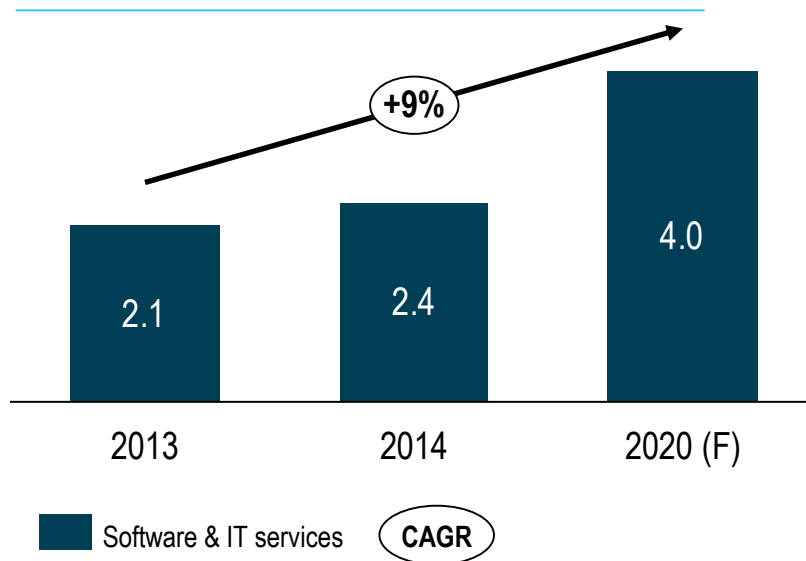
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# 1. Romania as a regional tech hub

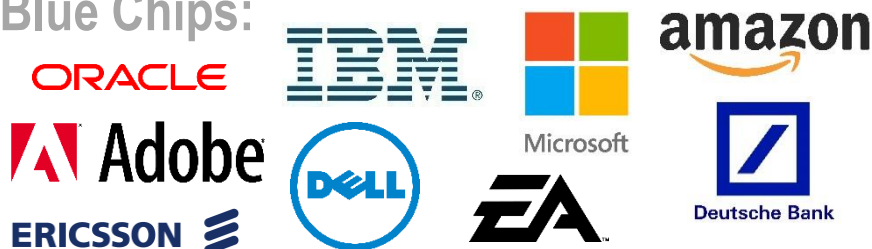
# Technology is a primary growth driver for Romania – the IT&C services sector is forecasted to reach EUR 4 billion by 2020

## IT&C services sector (EUR billions)

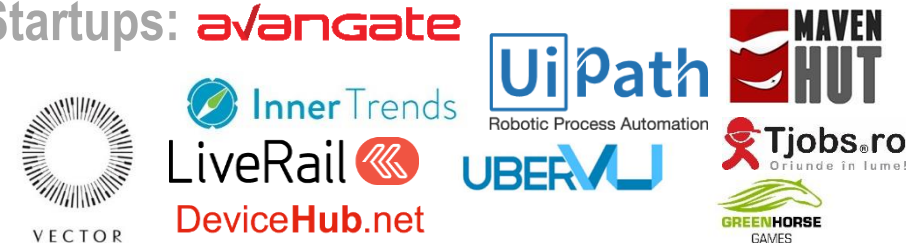


- Most of the market size is owed to outsourcing activities, with companies such as Oracle, Amazon, IBM or Deutsche Bank leveraging Romanian software development potential at a fraction of the cost in Western Europe
- With low living costs, high relative salaries and more capital at the doorstep, the startup environment is booming – Romanian software developers are also becoming entrepreneurs, creating products aimed at a global market in the main tech hubs of the country (Bucharest, Cluj-Napoca, Timisoara, Iasi)

### Blue Chips:

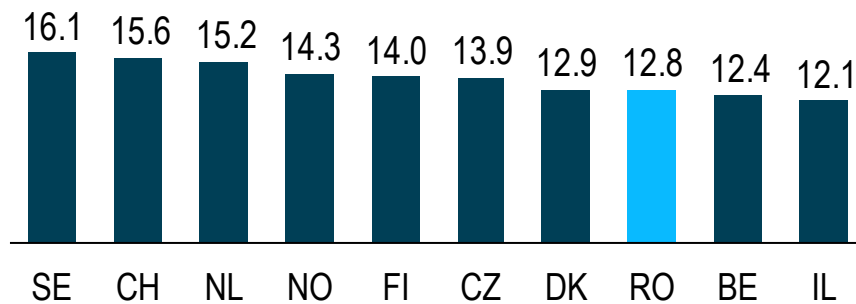


### Startups:

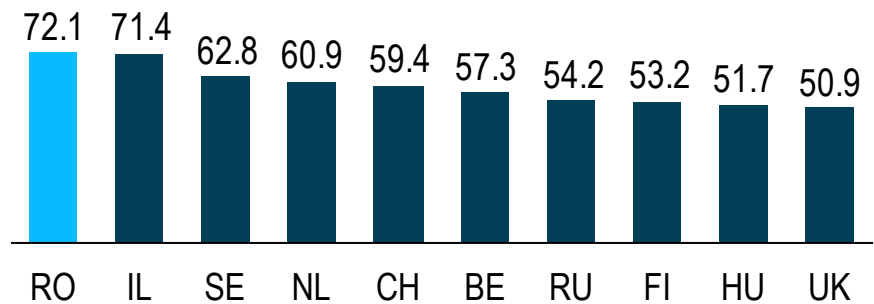


# Technology's rise to prominence stems from a good internet infrastructure used by an increasing pool of talented developers

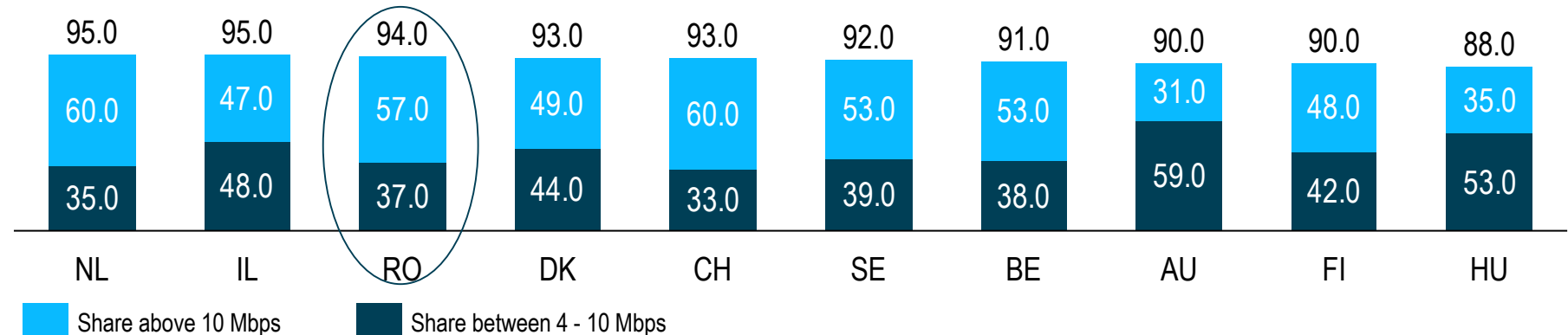
Top 10 EMEA countries by avg. speed (Q2 2015, Mbps)



Top 10 EMEA countries by top speed (Q2 2015, Mbps)



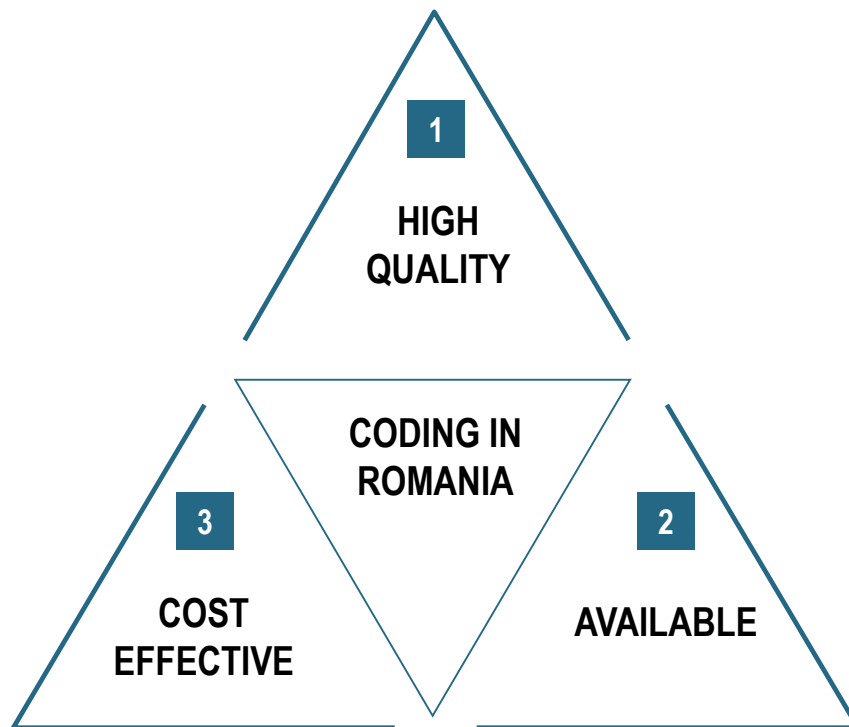
Top 10 EMEA countries by Mbps Broadband adoption (Q2 2014, % >4 Mbps)



- The internet infrastructure has developed along with the developers, who are leveraging the network to offer high quality outsourcing services, although the focus is now shifting towards product design and, consequently, startups

## 2. Software development in Romania

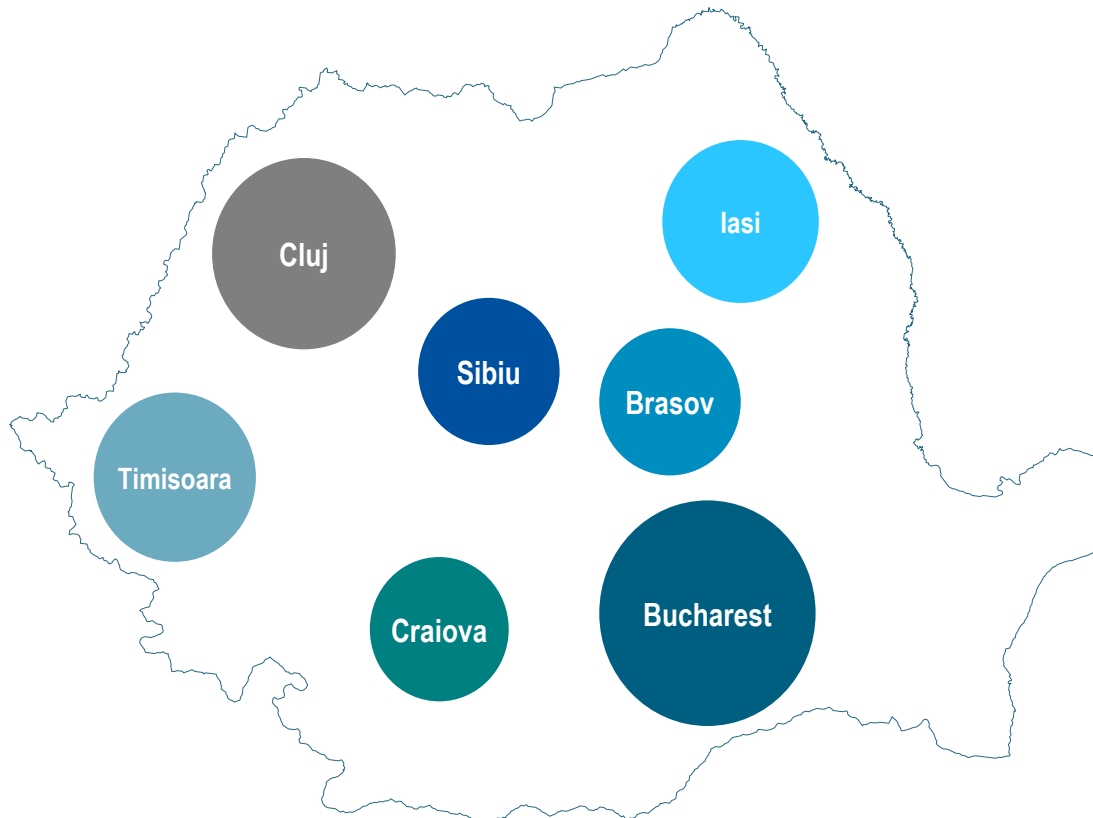
There are 7,000 IT&C grads in Romania every year, adding to a total of 90,000 with forecasts exceeding the 100,000 mark by 2018



- 1 High quality – top 10 worldwide at math and computer science international olympiads**
  - Romania consistently ranks in the top 10 in International Olympiad competitions in math and informatics, better than any other country in the EU
  - Romanian universities have been in the top 3 of the IEEE Design Competition every year since 2001
- 2 Available – number of engineers/ capita higher than the US, India, China or Russia**
  - There are 5 polytechnic universities in Romania, which together with 59 domain specific universities and 174 private colleges supply over **7,000 IT&C engineers every year**
- 3 Cost effective – value for money is much higher than in Western Europe or the US**
  - Avg. annual salary for a software developer working in Romania is EUR 17,000, with the low living costs implying a standard of living better than even London

# The 7,000+ annual IT&C grads specialize in a variety of programming languages, determining the creation of sub-clusters

## Romania's software development map



Size of bubble is directly proportional to cluster size

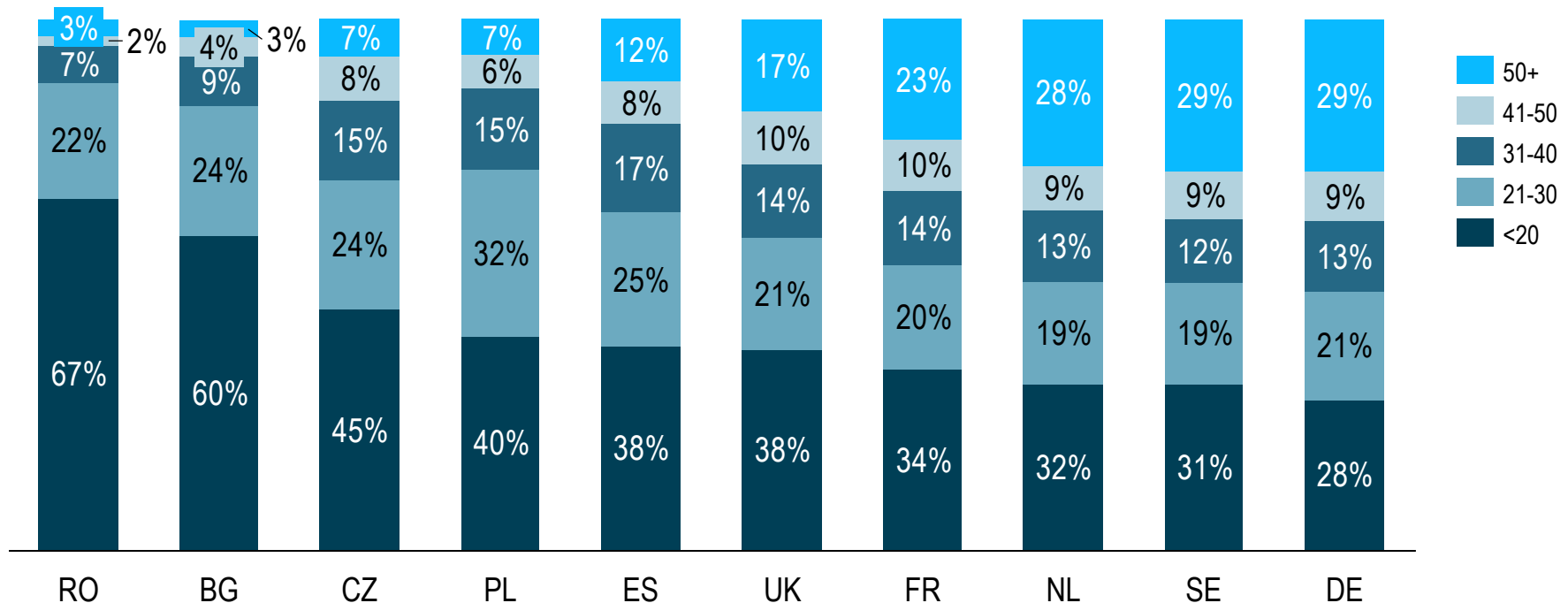
## Grads/ year Focus

Grads/ year	Focus
2,000	Mostly specialized developers, rare mix of technologies
1,700	Largest pool of full stack developers; Java, C#, .NET, PHP, Web
1,100	Java, .NET, C/ C++ (embedded developers)
1,100	Large pool of front-end and web developers, telecom engineers
500	Pool for C++ and helpdesk engineers
500	Pool for cloud and virtualization experts
230	Automotive software and gaming engineers pool



# Romania has the largest share of developers priced below USD 20/hour, making it the cheapest technology hub in the European Union

Spread of software developers by hourly costs in Europe, 2015 (% , USD/ h)

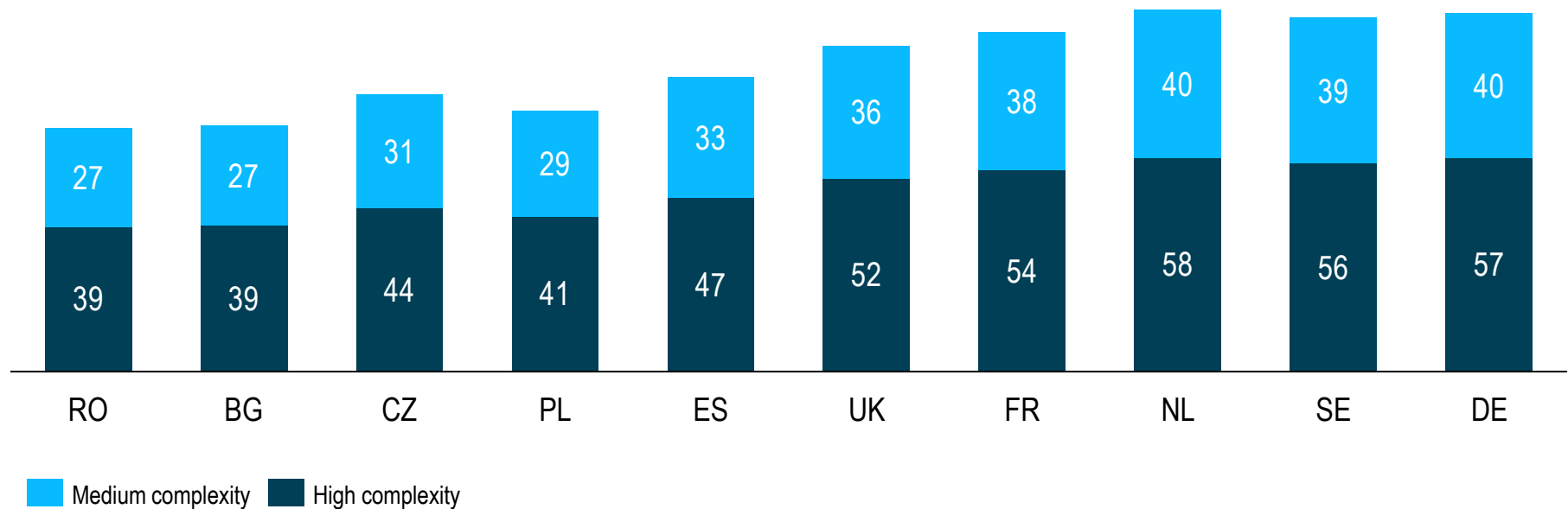


## Increasing government support dedicated to IT&C

- Employees activating in the IT&C sector benefit from an exemption of the 16% income tax
- Companies can also benefit from state aid financing schemes covering salary costs and offering specific benefits encouraging employment of young graduates

# A project's software development costs in Germany would be on average 47% smaller if developed by engineers in Romania (2015)

Spread of software development costs based on project complexity (USD/ h)



- While it is true that software developers in Romania account for a fraction of the cost of their counterparts in countries like Germany, UK or US, the product quality does not diminish – continuous sector growth especially on services export stands proof
- More and more developers are starting to focus on entrepreneurial ventures as well

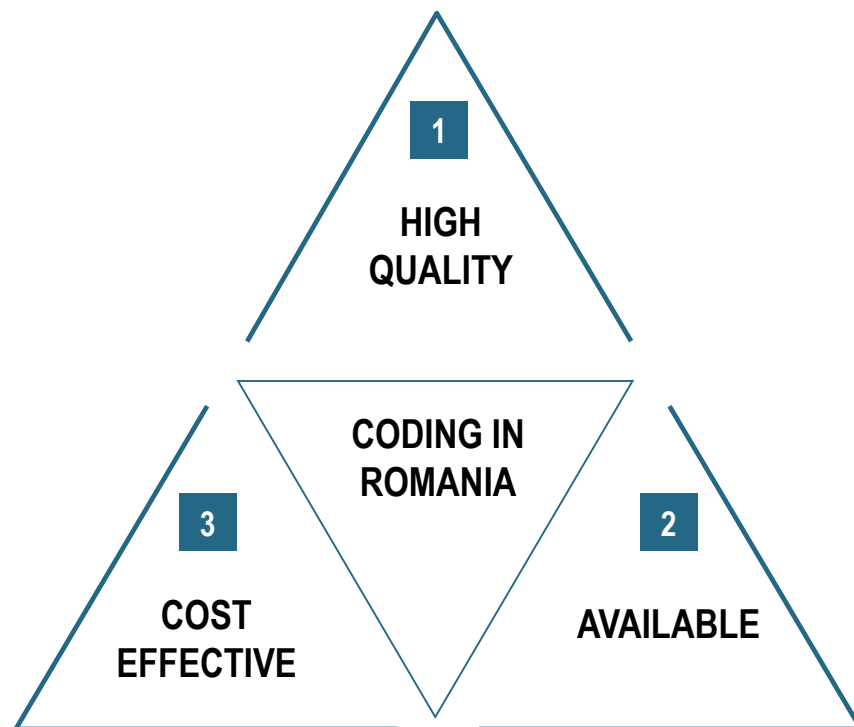
## 3. Cost of living

Despite smaller compensation, the standard of living can be very high considering the significant differences in various living costs

	BUCHAREST vs. BERLIN	BUCHAREST vs. LONDON
Consumer Prices	• <b>41% lower in Bucharest</b>	• <b>57% lower in Bucharest</b>
Rent Prices	• <b>56% lower in Bucharest</b>	• <b>86% lower in Bucharest</b>
Restaurant Prices	• <b>38% lower in Bucharest</b>	• <b>64% lower in Bucharest</b>
Groceries Prices	• <b>44% lower in Bucharest</b>	• <b>55% lower in Bucharest</b>
Standard of living equivalency (EUR 1,700 salary in Bucharest)	• <b>EUR 3,100 salary in Berlin ensures the same standard of living</b>	• <b>EUR 5,707 salary in London ensures the same standard of living</b>

## 4. BPO & SSC Zoom In

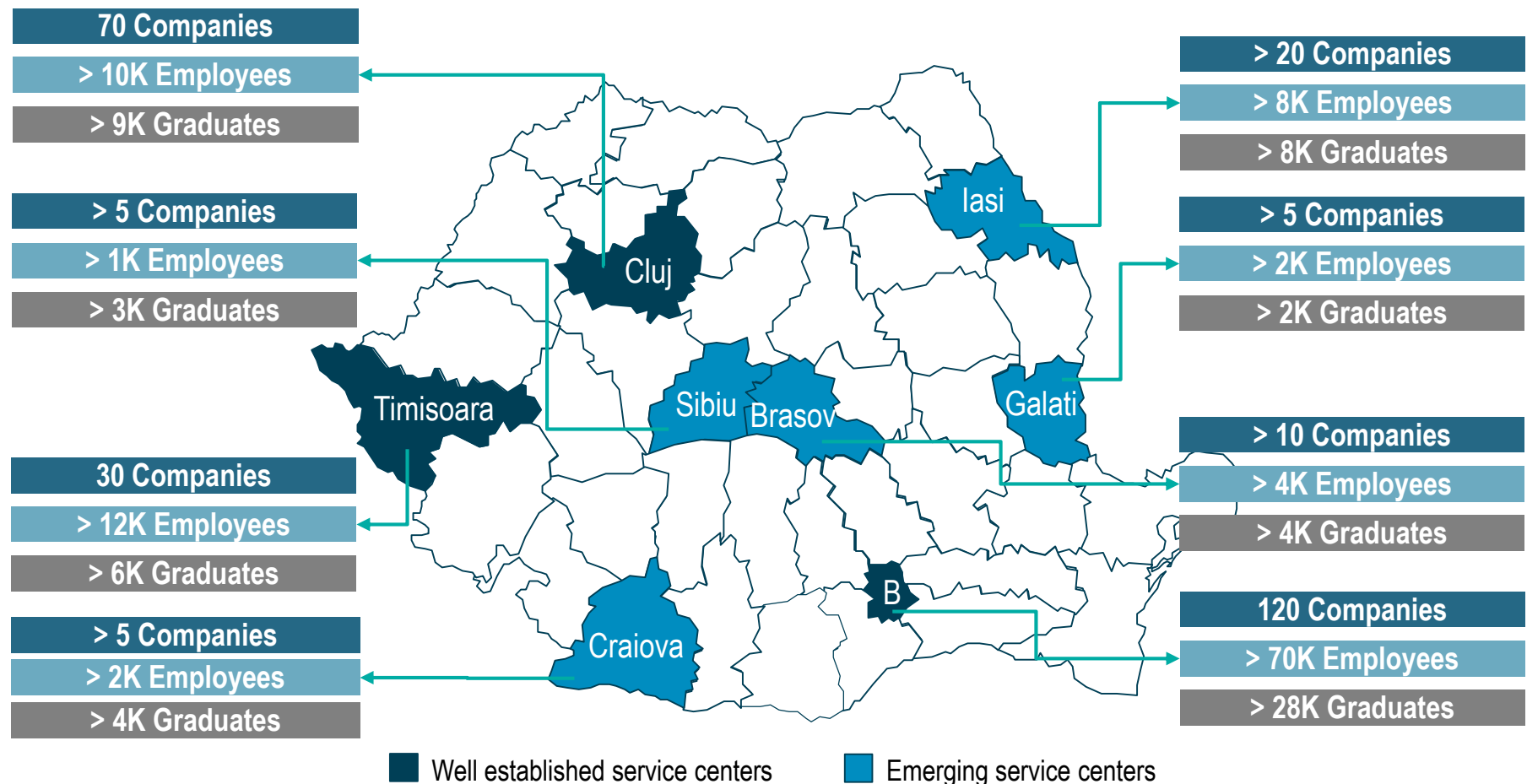
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# 3 cities in Romania are host to over 220 service centers, with 5 others emerging as hubs for another 45 companies

## Shared service centers in Romania



# Bucharest is Romania's largest outsourcing hub, hosting over 50% of local companies specializing either in BPO, SSC, ITO and R&D

## Top players – Bucharest



## Key figures

- Bucharest holds over 50% of the total volume of the outsourcing Romanian market
- Focus areas include BPO, SSC, ITO, and R&D
- ITO & BPO segments hold the largest part of the company volume (65%), followed by the SSC sector
- Compared to the other cities, it has the largest variety of skills and number of experienced candidates, but also the highest salaries
- Average net wage is EUR 571
- Market growth is expected at 10-15% by end of year



# Timisoara and Cluj are the main hubs in Western Romania, with a vibrant technology environment and good value for money

## Top players – Timisoara



## Top players – Cluj



## Key figures

- In recent years, the city has registered a significant economic boom, mainly due to foreign investment, especially in hi-tech. Average net wage is 428 Euro
- Numerous production companies are established in the area, which is considered one of the best developed in Romania
- Languages spoken: German, Hungarian, Serbian, English, French, Italian, Spanish and others

- The area has been attracting large investments from production companies, too
- The talent pool is skilled in many languages, especially English, German, French and Italian, and suited to providing multi-lingual services
- The average net wage is 418 Euro
- It is the second largest office market after Bucharest, with a vacancy rate of 7%

Iasi, in northern Moldavia and Brasov at the center of the country are 2 of the emerging technology hubs, with an increasing weight

### Top players – Iasi



### Key figures

- In 2013 a local IT cluster (the second one in Romania after Cluj) was born
- Iasi is home for companies which conduct business in the area ITO, SSC and SWO
- Large pool for technical French speaking candidates
- Lower workforce costs compared to Bucharest and a high rate of qualified personnel. The average net wage is 373 Euro

### Top players – Brasov



- Is an emerging hub in the industry of business services
- The availability of German speakers is higher than in other major cities
- It is also preferred as location for opening a secondary office for a company headquartered in Bucharest or Cluj
- The average net wage is 369 Euro

# Craiova, Galati and Sibiu, are attracting increasing investment due to significantly lower costs and developing education capabilities

## Top players – Craiova



## Key figures

- Is a small hub on the Romanian map when it comes to existing service centers;
- Craiova is **currently developing** as a business service center;
- Has a **small IT pool**, whose size is limited by the low number of graduates.

## Top players – Galati



- Currently a preferred location for Customer Care centers
- Small hubs of BPO and ITO centers present;
- Technical profiles with foreign language skills are limited

## Top players – Sibiu



- Sibiu is an **emerging service center** on the Romanian map
- The availability of German skills is higher than national average, which attracted employers looking for this skill