

With a strong tradition of technical and scientific education, relatively low cost bases, a strategic location, and growing support from governments and private investors, the tech sector in South-east Europe is a bright spot on the investment landscape. While other industries struggle with politics, bureaucracy and relatively small domestic markets, a growing range of homegrown tech companies and major multinationals are capitalising on the region's competitive advantages. This analysis focuses on three countries with active and growing tech scenes: Bulgaria, Romania and Serbia.

Romania: large market and talent pool

The biggest of the three countries by some margin is Romania, with a population of 19.5m, and the third-largest nominal GDP in Central and Eastern Europe (CEE) after Poland and the Czech Republic. With a pool of 118,000 developers,^[1] and a total 185,000 ICT specialists currently in employment, the country also has one of the largest ICT workforces in the region.^[2] Over the past two years alone, Romanian tech companies have sealed more than 100 financing deals, according to Bogdan Ceobanu, a former entrepreneur now in the European Commission's startups and innovation unit.

The most headline-grabbing is the \$568m Series D funding secured by Robotic Process Automation (RPA) outfit UiPath, ^[3] which values the company at \$7bn overall – making it one of only four tech unicorns in the region worth more than \$2bn. While the company is now headquartered in New York, it was founded by Romanians in Romania, and its operations are still predominantly in Romania. In March the company chose Bucharest for its first “immersion lab,” allowing clients to test RPA and artificial intelligence in a controlled environment. Thanks to UiPath's funding success, this year Romania tops the CEE table for tech investment for the first time.

Romania's other tech unicorn – that is, startups with a value of \$1bn or more – is online retailer eMAG, which was acquired by South Africa's Naspers in 2011 and now employs 4000 people regionwide. The Naspers acquisition was a relatively early sign of international investors' interest in Romanian tech firms. In another case of a global giant investing in a complimentary, innovative local partner, in early 2017 US wearable technology company Fitbit acquired Vector Watch, just two years after the latter's launch. The relatively rapid exit reflected Vector Watch's international expansion, but also Romania's strengths as a development centre for Fitbit.

One weakness that the ecosystem has historically had is a shortage of early-stage financing. Funding

from the EU and local entrepreneurs and angels is growing, and Ceobanu identifies new investment funds with a total of €150m led by Romanian investors. Nonetheless, industry figures say there could be better coordination between stakeholders, including the government, financial institutions and entrepreneurs, to support long-term ecosystem growth. One hope is that the sector will continue to be strengthened by knowledge and capital transfers from companies based elsewhere (particularly the US and UK) that have "Romanian DNA" – that is Romanian founders and developers. Some would put UiPath in this category; a better example might be video advertising optimisation business LiveRail, which was acquired by Facebook for \$400m-500m in 2014.

Bulgaria: lively venture capital scene

To the south, Bulgaria has similarly had a reputation as a tech centre for more than a decade.

International companies with research and development (R&D) centres in Bulgaria include the Financial Times, Uber, SAP and VMware. Sofia ranks top in CEE for number of funding rounds since 2013, according to dealroom.co, with 246 – more than either Warsaw or Tallinn, the home of Skype.^[4] For a relatively small country, Bulgaria has a remarkably active venture capital (VC) scene. Key players include NEVEQ which – with the backing major institutional investors, family offices and private investors – has deployed €45m in two funds since 2007. The management teams have raised a further €30m, which is now being deployed.

Other active VC firms include LAUNCHub, which was established in 2012 with a €9m pre-seed fund and announced a second €20m seed fund four years later; and Eleven, a Sofia-based VC platform offering pre-seed and seed funding from €100,000 to €500,000 and up, as well as support including access to a wide network of alumni and mentors, backed by more than 30 private investors.

Across the sector, overall investment value remains relatively small. VC investments have totalled €86m in the past six years, but business data company dealroom.co is among those seeing this as indicating considerable opportunities for expansion.^[5] The organisation notes that 15% of Bulgarian startups are in deep tech (based on substantial scientific advances and high-tech engineering innovation), suggesting strong scope for value creation. Currently the digital economy accounts for 7% of GDP, and this could grow to 16% by 2025, according to global consultancy McKinsey.

Indeed, the venture capital is there for a reason: exits have generated upwards of €400m since

2015.^[6] Landmark deals include the \$262.5m acquisition of application development tool developer Telerik by US-based Progress Software; Francisco Partners' \$50m acquisition of Dynamo Software, which focuses on the alternative investments sector; and MM Solutions, a mobile image software developer, bought by China's ThunderSoft for \$34m last year.

Serbia: Tesla nation

While Romanian tech leaders work to engage their compatriots who have built tech successes abroad, the Bulgarian Venture Capital and Private Equity Association has launched a similar initiative called RE:TURN with partners including the America for Bulgaria Foundation.^[7]

And to the west, Serbian tech leaders see leveraging the country's diaspora – estimated at 2.7m – as one of the country's major competitive advantages. Startup Genome, which supports startup ecosystems worldwide, calculates that the global connectedness of founders in Belgrade and Novi Sad (Serbia's second city) to other top ecosystems is considerably higher than average for markets in "activation stage," and exceeds that of even Frankfurt and Manila.^[8] The leading Serbian community of tech entrepreneurs and professionals, Tesla Nation, estimates there are 2500 software companies active in Serbia, while the tech sector as a whole has seen export earnings rise tenfold over the past decade to more than €1bn.^[9]

More than half of Serbian startups are export-orientated. The tech sector – now the country's single largest contributor to GDP – has traditionally been dominated by service companies. These account for two-thirds of the industry, capitalising partly on the value of the skilled workforce, with annual salaries for a developer with five-plus years' experience around \$35,000-40,000. But those companies are increasingly focused on deep technology expertise, while the number of companies developing their own products is also growing. The Digital Serbia Initiative estimates that startups have raised more than €140m in VC financing.

Success stories include desktop-as-a-service platform Frame, a Silicon Valley-led outlet with its main team in the southern city of Nis, which was bought by Nutanix for an estimated \$200m in 2018 having been backed by investors including Bain Capital. Earlier this year, Epic Games acquired Belgrade-based games studio 3Lateral for €100m; the former, the US-based developer of Fortnite, now has an R&D centre developing "digital human technology" in Serbia. Another Serbian gaming studio,

Nordeus, developed Top Eleven, one of the world's most popular online sports games.

International corporates have also chosen Serbia as a key service and development centre. Perhaps most prominent is Microsoft, which has a large development centre in Belgrade that is the company's only severe emergency centre for its Azure cloud technology outside its Redmond, California base. BMW is developing autonomous driving software with a Serbian partner.

Serbia's tech workforce of 30,000 people is growing rapidly, with more than 3,300 students a year graduating in software engineering alone. And while business leaders in other sectors complain of bureaucracy and political interference, in tech many praise the government's proactive approach. Tech companies enjoy accelerated R&D deductions and "IP box" tax regimes, meaning that they pay nearly no corporate income tax, according to the Digital Serbia Initiative.

Outlook

All too often in South-east Europe, and emerging markets more broadly, economic potential is under-realised. The regional tech ecosystems are unlikely to equal those of global centres in the foreseeable future. But the emergence of internationally competitive homegrown companies and investments by major multinationals indicate that the region's combination of talent pool, geography, costs and support from the EU and national governments is paying dividends. EU funding is likely to taper down in the coming years; a challenge will be engaging more private investors, and strengthening the domestic and international network of stakeholders from entrepreneurs to regulators.

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