REPUBLIC OF SERBIA
Ministry of Economy
Ministry of Finance
Department for Contracting and Financing
of EU Funded Programmes

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by the European Union
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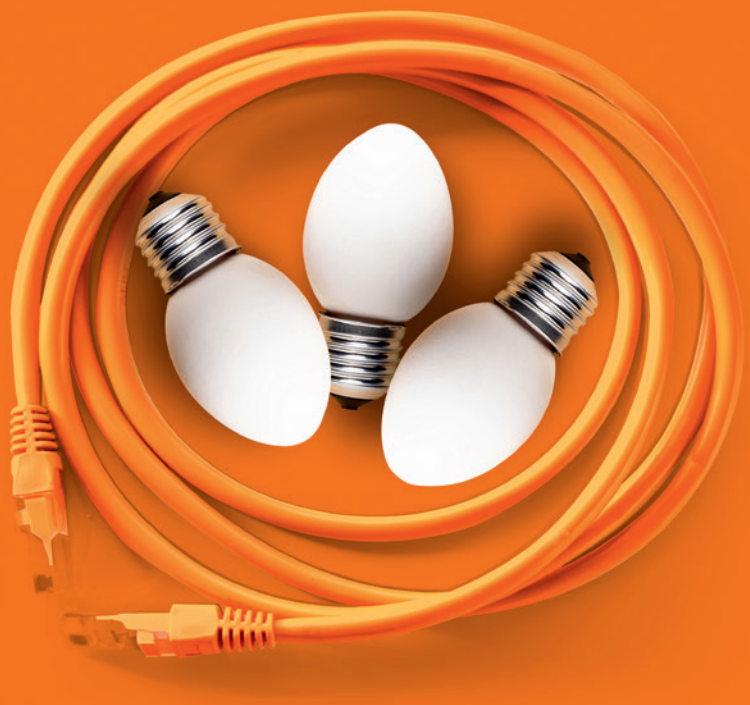

Study on the current situation of BIs in the Republic of Serbia

January 2020

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Business incubators enabled to provide
high value services to SMEs

January

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Study on the current situation of BIs in the Republic of Serbia

GFA CONSULTING GROUP

IDI

UNIVERSITÄT ZU LÜBECK
INSTITUT FÜR ENTREPRENEURSHIP
UND BUSINESS DEVELOPMENT

SEED FORUM

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Table of Contents

6

Assessing Tenants' Needs for Business and Innovation Support services 68

7

BI Roadmaps and Identified Suggestions for Upgrading BIs 88

8

Conclusions and Recommendations for Further Improvement at the Level of the BIs Ecosystem in the Republic of Serbia 98

9

Toolkits and Roadmaps 100

List of Figures

List of Tables

Acronyms

ADA	Austrian Development Agency
BI	Business Incubator Initiative
BIC	Business Incubator Center
BICs	Business and Innovation centres
BINS	Novi Sad Business Incubator
BITF	Business Technology Incubator of Technical Faculties
CRM	Customer Relationship Management
CSES	Center for Strategy & Evaluation Services
EBN	European Business Innovation Network
EBRD	European Bank for Reconstruction and Development
EC/OECD	Policy Brief on Incubators and Accelerators that Support Inclusive Entrepreneurship
EDA	U.S. Department of Commerce Economic Development Administration
EEN	Europe Enterprise Network
EFQM	European Foundation for Quality Management's
EM	Evaluation and monitoring process
EU	European Union
HEIs	Higher Education Institutions
HT	High-Tech
ICT	Information and Communications Technologies
IDEAS	Innovation Development Early Assessment System
InBIA	International Business Innovation Association
InfoDev	World Bank Group Program to Promote Entrepreneurship & Innovation
InTER	Institute for Territorial Economic Development
IPA	Instrument for Pre-Accession Assistance
IPO	Initial Public Offering
IPR	Intellectual Property Right
ITU	Digital Innovation profile for Serbia
JRC	Joint Research Centre
KPI	Key performance indicators
MoE	Ministry of Economy of the Republic of Serbia
MVP	Minimum viable product
NARR	National Agency for Regional Development
NBIA	National Business Incubation Association
NES	National Employment Service
NGO	Non-Governmental Organization
NIP	The National Investment Plan
NIS	National Innovation System
OSCE	Organisation for Security and Co-operation in Europe
PPP	Public Private Partnership
R&D	Research and Development
RARIS	Regional Development Agency for Eastern Serbia
RAS	Development Agency of Serbia
RDI	Research, Development and Innovation
SC	Selection Committee
SE	Self-Employment
SEE	South East Europe
SIDA	Swedish International Development Cooperation Agency
SMEs	Small Medium Enterprises
STPs	Science and Technology Parks
TAT	Technical Assistance Team
ToR	Terms of Reference
TRL	Technology Readiness Level
TTOs	Technology transfer offices
UK	United Kingdom
USAID	US Agency for International Development
VC	Venture Capital
WBC	Western Balkans Countries

Terminology

Business incubators	are defined as shared infrastructure with office and/or laboratory facilities that seek to provide their incubatees with a strategic, value adding business development services. Thus, business incubators, science and technology parks, co-working spaces, hubs, start-up centres, corporate incubators and acceleration initiatives.
Peer Review	is the evaluation of work by one or several persons (peers) with similar competences. It is a form of self-regulation by qualified members within the relevant field. Peer review methods are applied to maintain standards of quality improve performance and provide credibility.
Accelerators	programmes for supporting businesses to grow rapidly, through accessing a package of financial and capacity building support and mentoring, usually in return for an equity share.
Pre-incubators	support focused on the pre start-up phase of business development, typically offering coaching, business advice and basic facilities (e.g. a workspace, equipment) to support development of business ideas and preparation of business plans.
University incubators	based in universities and research centres, providing support to business ideas from students or academic personnel, as well as spin-offs from university R&D activities.
General purpose incubators	provide a broad set of services covering pre- to post-incubation phases to those who have a feasible business idea. Typically, not sector-specific, or focused specifically on innovation or technology.
Sector-specific incubators	provide a broad set of services, and specific equipment or infrastructure covering pre- to post-incubation phases, to those who have a feasible business idea within a specific sector (e.g. environment, agro-food, chemicals).
Coworking Spaces	mainly provision of a physical space, often a shared desk, and are commonly found in larger urban areas. They may also offer basic incubation services, and offer workshops or networking events.
Corporate incubators	invest in new businesses and start-ups linked to corporate goals or corporate and social responsibility strategies, and often have a medium to long term objective of taking ownership of more successful ideas that are incubated, and integrating them into the corporate portfolio.

Introduction & Purpose of the Study

A key priority for Serbia is strengthening competitiveness of the economy, with special emphasis on innovation, entrepreneurship and micro, small and medium sized enterprises (MSMEs). As a component within this, one central objective is to reduce unemployment and increase the ability of young people to transform their own ideas into successful business ventures. This requires policy assisted support directed towards those who are just entering the business world, as well as small businesses who are struggling with the daily challenges of the market.

With the main purpose of strengthening such policy support, the Ministry of Economy launched the project *European Union Support for Business Incubators Development - EUBID*, with financial support through the EU Instrument for Pre-Accession (IPA). This will build capacity of business incubators (BIs) in order to provide high value services to beginners in business, ensuring further growth and development and thereby increase the survival rate of entrepreneurs in the market in the first years of operation. The implementation of this project commenced in January 2019, and will be completed in January 2021.

The most important project task is to improve the range of services business incubators provide to their users, focusing on the development of incubators that support high-tech start-ups as well as incubators that are focused on the self-employment of vulnerable groups.

To guide the development of the services provided by BIs to users, as well as introduce public-private partnership as a model for the future development of business incubators, a comprehensive study was commissioned as part of the project. This is designed to provide a baseline assessment on the state of existing BIs in Serbia, their functionality and services they provide.

The analysis reported in this study of the current situation of BIs in the Republic of Serbia derives conclusions and recommendations on how to improve the efficiency, effectiveness, impact and sustainability of BIs in the Republic of Serbia. The recommendations will contribute towards the further development by the project of: 1) a mentoring program for improving business incubator services, focused on the development of the incubators that support high-tech start-ups and the incubators that are focused on the self-employment of vulnerable groups; and 2) the introduction of public-private partnership as a model for the future development of business incubators through strengthening the capacity of local institutions that should be the initiators and supporters of this model.

The study report presents a brief historic overview of the development of BIs and business infrastructure in the Republic of Serbia, as the context for more in-depth information and assessment regarding the number of functional BIs and their current service portfolio. This will provide the basis for design of upgraded delivery of services to users by BIs, supported by the project.

The performance assessment within the study evaluates BIs from both the supply-side perspective of the BIs, as well as the demand side requirements of BIs from SMEs and start-ups. The performance of individual BIs, considering their business strategies, management capacities, willingness to change, commitment of founders and financial sustainability is assessed as well. The current services provided are also examined in detail. The assessment also looks in detail at the needs of enterprises and SMEs' demand for support services that should be provided by BIs. Through this joint demand-supply approach, a gap assessment is concluded on areas for service improvement.

Based on the assessments within individual BIs, conclusions and recommendations for further improvements

at the level of the network of BIs in Serbia are presented. Roadmaps have also been produced for improvement of individual BIs that were assessed. These are not included within this main report, but have been made available to the Ministry of Economy as well as each of the assessed BIs, as the basis for planning of follow-up activities.

The Study findings have been used for the development of three BI Toolkits that are available as stand-alone components and are shortly described in the section **9. Toolkits**.

These provide practical methodologies for BIs to use to enhance their performance and operations, and evaluate how successfully they are providing support to start-ups and SMEs. Relevant templates, examples, and checklists are included within the Toolkits to aid use by BIs.

Business incubators enabled to provide high value services to SMEs - EUBID project should contribute to increasing the competitiveness and innovation of beginners in business. The project is aimed at improving the sector of SMEs and entrepreneurship, with the support of the Ministry of Economy of the Republic of Serbia. The EUBID project is worth 1.5 million Euros, financed by the European Union and implemented by a consortium led by GFA Consulting Group.

1 The Business and Innovation Ecosystem in the Republic of Serbia

In the recent EU Joint Research Centre (JRC) report on developing start-up innovation ecosystems[1] within South East Europe, it is noted that success requires many stakeholders working together, within unique ecosystems defined through a mix of cultural and institutional difference, geographical position, and political context. Business incubators form just one element, albeit an important one, within the broader start-up, innovation and entrepreneurship ecosystems of the Republic of Serbia. These can be regional or national, and help "start-ups, SMEs, large-sized enterprises, universities, and public organisations interact on a technological, social, legal and commercial basis in order to produce knowledge, develop new technologies and new business opportunities"[2].

This ecosystem development aligns with policy priorities of the Serbian Government, including ongoing work on tax reform, education and training, grant and loan programmes to SMEs through various institutions like the Innovation Fund, Cabinet of the Minister for Innovation and Technological Development, Serbian Development Fund, Development Agency of Serbia (RAS), and Ministry of Economy, as well as with emerging EU assisted financial support through EDIF, H2020 and COSME.

Within the ecosystems, business incubators can speed up the development of start-ups, create new jobs, and enhance the exploitation of technology through supported networking effects of linking technology, finance and know-how.

A new EC/OECD Policy Brief on Incubators and Accelerators[3] emphasises that in addition to the widespread evidence on the benefits of business incubators towards higher business survival rates, greater job creation, and wealth and revenue created, there may be untapped potential in using them more intensively in processes of social inclusion, to support entrepreneurs from under-represented and disadvantaged groups including women, youth, ethnic groups, the unemployed, people with disabilities, and older people.

For this reason, we define two main categories of business incubators that we examine within this study: a) business incubators primarily supporting high-tech entrepreneurship, and b) business incubators supporting self-employment.

In this chapter of the Study, we examine some of the existing evidence on the contribution of Serbian business incubators to the development of the ecosystems supporting start-up, innovation, entrepreneurship and self-employment[4].

1.1 Recent analysis and issues in developing the Serbian start-up ecosystem

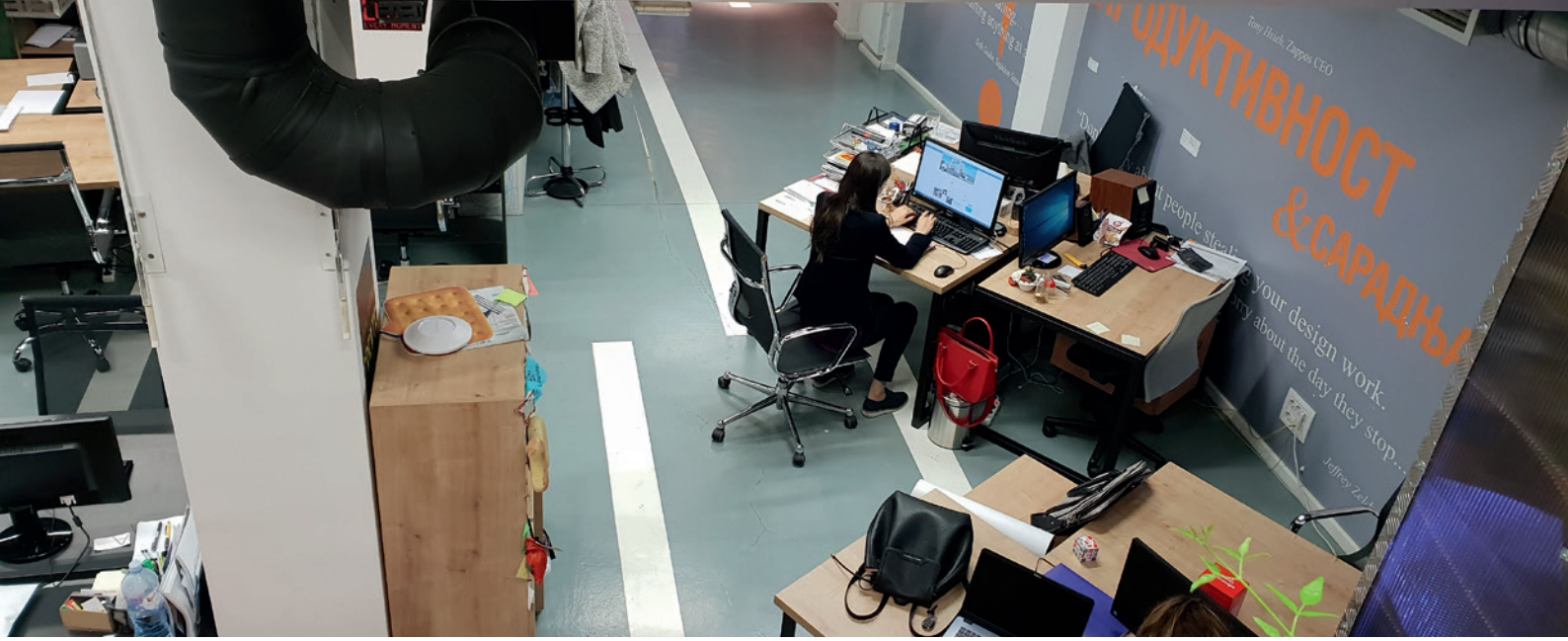
Regarding the development of specific elements emerging within the Serbian start-up and innovation ecosystem, there is a wide range of useful, recent studies, with recommendations, that have been published in the past few years in Serbia (as well as covering South East Europe and the Western Balkans more generally). We have selected some contributions that are most directly relevant to business incubators, and highlight some important, specific issues. It should be noted that there are also other reports focused on more specialized topics, especially those of relevance to developing

[1] Basso, A. et. al. (2018) Start-up Innovation Ecosystems in Southern Europe, European Commission, Brussels, 2018, JRC113872.

[2] Ibid p.4.

[3] EC/OECD (2019) Policy Brief on Incubators and Accelerators that Support Inclusive Entrepreneurship, Luxembourg: Publications Office of the European Union, doi:10.2767/092345.

[4] This is a selective review to identify and present key issues, and is not intended to provide a comprehensive summary of the available literature and reports on these topics.



In Centar Coworking space in Belgrade

self-employment (e.g. broader analysis of SME development barriers[5]; youth entrepreneurship[6]; participation of women in entrepreneurship and self-employment[7]; and social entrepreneurship[8]), and other forms of innovation-related business support within the ecosystem (e.g. clusters, science and technology parks, technology transfer offices (TTOs) etc.).

To provide context for the analysis of Serbia's performance in developing business infrastructure and business incubators in support of innovation, we note that the 2019 Global Innovation Index (GII) puts Serbia in 57th place (out of 129 countries), compared with 55th place from the previous year.[9] Serbia is in group of upper-middle income countries and in line with expectations for the current development level. Considering strength of institutions Serbia is in the 47th place among 129 nations, by human capital & research on 59, business sophistication 63, infrastructure 54, market sophistication 103, knowledge & technology outputs 48 and creative outputs 65.[10] For regional comparison, the Global Innovation Index 2019 shows Slovenia in the 31st place, Croatia 44th, Montenegro 45th and Northern Macedonia 57th.

Sectoral specialisation can support smart specialisation

The Start-up Genome Network[11] asks a simple question: In which ecosystems does an early-stage start-up have the best chance of building a global success? Based on analysis of more than 150 cities and towns and 54 start-up ecosystems around the world, the 2019 report for the first time identifies the regional ecosystem comprising Belgrade-Novi Sad Serbia as amongst the most promising start-up locations globally.

Their analysis notes that although the ecosystem is still at an early development 'activation stage', it has grown significantly in the past two years, with growth of investments in local start-ups and the overall number of start-ups. Featuring in the world's top 10 ecosystems are the sub-sectors of gaming and blockchain, where Serbia is amongst the most developed areas. Accessible high-quality engineering staff are identified as a key advantage.

5 Culkin, N. and Simmons, R. (2018) assessment of barriers to MSME development, British Council, British Embassy and Swedish Institute

6 Bobić, D. (2017) Youth Entrepreneurship in Serbia: Mapping barriers to youth entrepreneurship, Centre for Advanced Economic Studies, GIZ

7 Jovanović, O. and Lazić, M. (2018) Women Entrepreneurship in Serbia – Potentials and Constraints, Journal of Women's Entrepreneurship and Education, No. 3-4, 60-72; Beker, K et. al. (2017) Situation of rural women in Serbia, Shadow Report to the Committee for the Elimination of All Forms of Discrimination against Women regarding the fourth reporting cycle of Serbia

8 Rosandic, A. and Kusinikova, N. (2017) Social Economy in Eastern Neighbourhood and in the Western Balkans: Serbia Country Report, DG NEAR

9 **https://www.wipo.int/global_innovation_index/en/2019/**

10 same as 9

11 https://startupgenome.com/ecosystems/belgrade-and-novi-sad

Encouraging start-ups through digitally based innovation

As we will see in our analysis of current business incubator clients, ICT-related businesses form a significant component of the client base, and are a strategically important sector for Serbia. The 2018 ITU Digital Innovation profile for Serbia[12] provides a comprehensive assessment of the innovation ecosystem and a digital transformation roadmap to develop ICT centric innovation policies and programmes. Whilst the assessment of core ecosystem elements indicates a satisfactory development of business incubation and acceleration, many features of an integrated system still need to be further developed and linked to business incubation.

The following current priorities for developing digitally-based innovation highlight actions that would complement business incubation in support of digital innovation: aligning the education system with the needs of the IT industry; modernizing curricula and increasing enrolment in IT studies; encouraging IT sector investments through tax incentives; supporting domestic exporters of software; subsidizing IT sector start-ups; and subsidizing equipment and software for SMEs.

Networking, knowledge and experience within the ecosystem

Analysis on Serbian Start-ups for the German-Serbian Chamber of Commerce in 2019[13] also highlights the important role of ICT-based start-ups for Serbia, noting the perception that the ecosystem is still early-stage and fragile. Various forms of infrastructural and technical support, including various hubs, incubators, coworking spaces and accelerators have emerged in recent years, providing entrepreneurial support, seminars and events.

These provide a basis for shared connections, learning and development. A common feature is the provision of coworking space, covering financial costs of providing facilities, and which encourages interaction between entrepreneurs: “Designers and programmers sit side-by-side to architects or businessmen” (p.14). Start-up programmes are typically short-term (around 3 months), cover relevant areas such as finance, marketing and sales, legal issues, proof of concept and market entry strategies. Similarity of content amongst programmes and providers, and a generalised approach that lacks sector-specialised focus, leads to competition among the incubators, and some start-ups may therefore participate in several programmes. Mentors, experts, speakers and audience may come across each other in various settings, through a well-connected and growing community. Media and social media coverage of the local start-up scene has been increasing.

Missing features of the system include opportunities for early exposure to potential clients and customers, and targeting of international markets by accessing expertise that has real experience in these markets. Professionalism in presenting ideas and market readiness may be constraining investments. Incubators, investors and start-ups all identified lack of knowledge in market strategies for developing sustainable revenue streams.

The overlapping and sometimes competing nature of the start-up ecosystem may require future consolidation and increased coordination to increase market positioning and alignment with mission of different hubs and incubators. Within the emerging ecosystem, the process of successful founders that exit and become part of the ecosystem as future investors and mentors should enhance the system-wide knowledge and experience transfer that will accelerate progress.

Focus on linkage between start-up and scale-up

The most recent 2018 assessment of South East European Start-ups by the ABC Accelerator Group[14] concluded that although Serbia is quite successful in creating start-ups, there are not many good scale-up companies emerging. It notes that policymakers need to implement data-driven decision making, and Serbia should focus on growing existing early stage start-ups through to scale-ups and towards exit. It highlights availability of start-up weekends and hackathons supported through organization technology parks and start-up incubators.

[12] TU (2018) Digital Innovation Profile: Serbia — ICT centric innovation ecosystem snapshot, Geneva

[13] Berndt (2019) Start-ups in Serbia: A glance at the start-up ecosystem in Serbia, a study conducted for and on behalf of the German-Serbian Chamber of Commerce.

[14] **https://abc-accelerator.com/wp-content/uploads/2019/01/South-East-Europe-Ecosystem-Report-2018.pdf**.

The lack of systemic financing of Science and Technology Parks and business incubators presents political risks for continuity. The ABC Accelerator Group 2017 assessment[15] highlighted that:

> "Most of the actors in the ecosystem have a basic understanding who does what, but the deeper connections and exchanges are lacking. It is important to note that the situation has been improving since 2016, where more connections have been established and the actors are in closer communication. A good example is the cooperation between ICT HUB and Novi Sad Business Incubator, these two organizations have been organizing some events and mentoring sessions together, even though they almost didn't know each other a year or two ago… Aside from the connection between STP (and BITF) with the technical faculties, there is not that many connections between academia and the start-up ecosystem. The best communication on this level is in Novi Sad." (p.35)

Building trust through enhanced capacities

The Danube-IncoNET Policy Mix Peer Review Report on Serbia[16] noted weak linkages between universities and established industry, whereby "companies do not consider higher education organisations as good partners for service provision or innovation" (p.13). Building trust is viewed as an urgent task.

Despite this, however, it is noted that public universities are playing a significant role in the national innovation system of Serbia, and are active in technology transfer and incubation, especially in ICT and biotech/food. Their roles as drivers of local and regional innovation through science parks, and technology incubators are identified. Modes of cooperation include partnership with local governments and national government, and international donors. Good examples cited include universities in Belgrade, Novi Sad, Niš and Kragujevac. Although the technology transfer system is assessed as being at an early stage, with significant improvements required to increase commercialization and research deal flow, significant service developments in technology and innovation infrastructure were observed through activities of new science and technology parks, university technology transfer offices, public and private incubators and several private innovation promotion initiatives, mostly in main university cities.

Despite new business-technical incubators, science technology parks and technology transfer centres within the previous five years, infrastructural innovation support was still found to be lacking somewhat, due to lack of human and financial capacities. The lack of long-term and sustainable financing of business-technological incubators through donor initiatives was noted.

One identified weakness relevant to business incubators was an observation of limited staff with specialized capacities for start-up support, and incubators management, and support to transfer technology through patenting etc.

> **In relation to strengthening the innovation ecosystem, the Policy Mix Peer Review concludes that:**
>
> **"the Serbian experience follows the pattern of other transition countries: large number of organisations have been set up thanks to international financial support. But after completing the initial phases most of these newly set organisations face lack of efficacy and resources. Most of the existing organisations suffer from inappropriate development of competencies and lack of funding. The peer review team shares the opinion that high priority should be given to the quality of services provided and to the development of new internal competencies in the upcoming years" (p.14).**

Contributions towards an agenda for business incubator development

Whilst the ITU assessment mentioned above marks incubators and accelerators as well supported, the 2018 OECD Policy Outlook Report on Competitiveness in South East Europe[17] is somewhat more critical, identifying various areas for further development. The score (out of 5) given to Serbia for incubator and accelerator development is 2, indicating a "Framework specifically addressing the policy area concerned is solidly in place, officially adopted by the government or parliament…The framework includes policy features which are necessary to make it effective." (p.33)

[15] **https://abc-accelerator.com/see-report-2017/**.

[16] **https://danube-inco.net/object/document/18797/attach/D4_32__Policy_Mix_Peer_Review_Serbia_final.pdf**.

[17] OECD (2018), Competitiveness in South East Europe: A Policy Outlook 2018, Competitiveness and Private Sector Development, OECD Publishing, Paris, **https://doi.org/10.1787/9789264298576-en**.

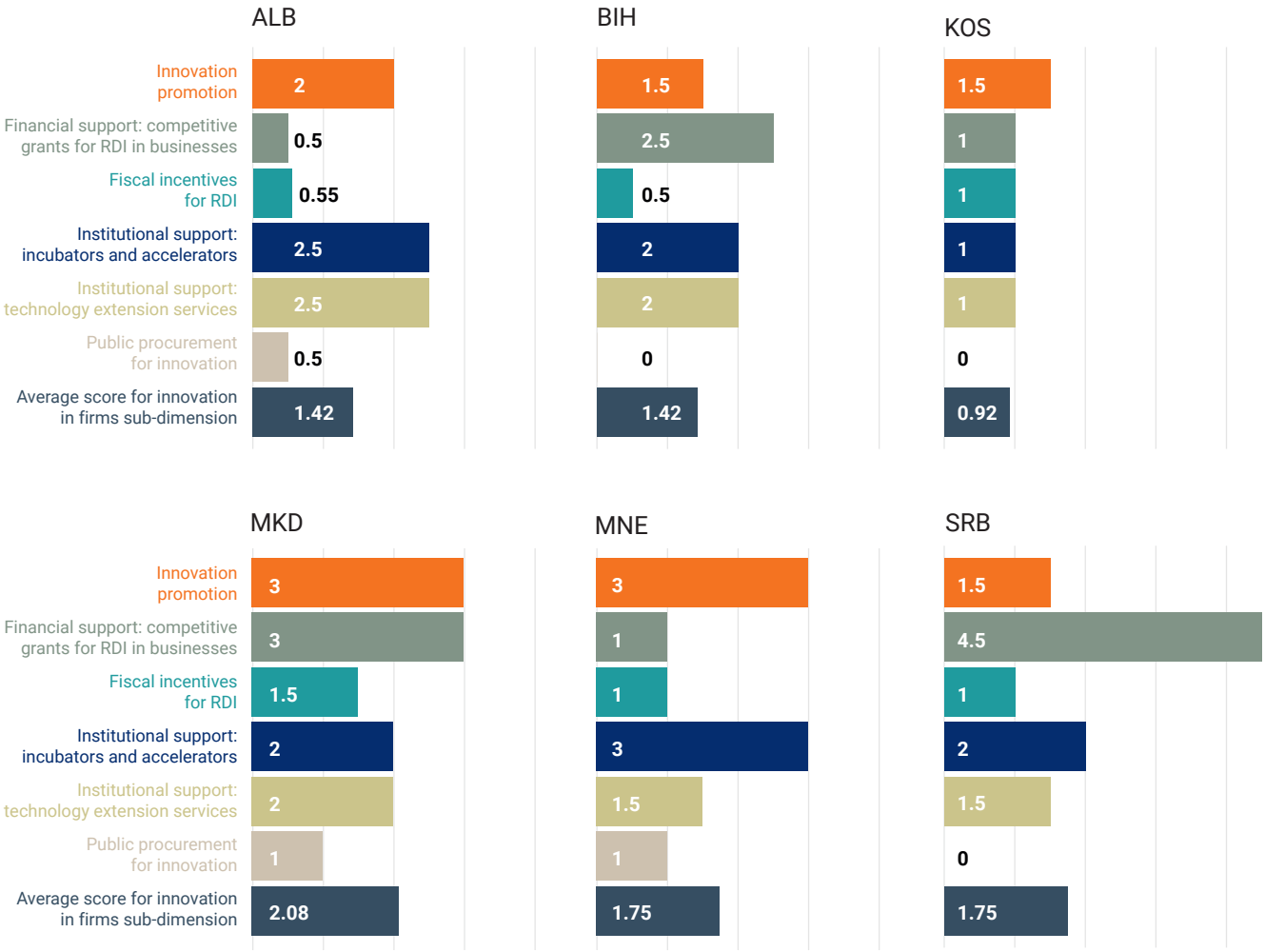


Figure 1. Serbia OECD 2018 SEE Competitiveness Assessment of Incubators and Accelerators

Source: Figure 9.14 of Competitiveness in South East Europe: A Policy Outlook 2018, on Innovation in firms: Sub-dimension average scores and indicator scores

The analysis notes that a range of core services is being developed within incubators, that are currently providing relevant services such as co-working space, training and specialized events such as hackathons and start-up weekends (p.368). The core funding structure for business incubator development is identified as support via municipalities and NGOs (p.368).

Key findings that suggest a partial agenda for further business incubator development include:

- **Better Policy Leadership:** efficient implementation of adopted strategies requires improving horizontal co-ordination between ministries and agencies, both at the decision-making and implementation levels (p.379)
- **Improved Technology and Knowledge Transfer:** Whilst Serbia has set up science and technology parks (STPs), they have yet to fully develop activities to facilitate knowledge transfer and linkages between business and academia (p.344)

BIC Kragujevac

- **Sector-Focused Technology Transfer:** Smaller-scale competence centres with a sectoral focus might prove more likely to achieve the goal of knowledge transfer (p.371)

- **Sustainable STPs and BIs:** The costs and benefits of large STP projects should be estimated carefully, and feasibility should focus on creating relevant links between science and academia, rather than simply operating as incubators or training centres (p.371)

- **Strengthening Academic Linkages:** Belgrade STP is observed as currently operating more as an incubator than a fully developed Science Park, where links to academia are not well established, and collaboration between companies and academia is still rather an ad hoc (p.375)

- **Addressing Missing Policy Elements:** Technology extension services, procurement for innovation and fiscal incentives for RDI, to complement incubator infrastructure, are largely absent from government policies. Serbia could consider implementing policies to spread new technology to a broader range of SMEs through technology extension services (EBRD experiences suggests a cost per job estimate of €5k) (p.364)

- **Providing Integrated Information Services:** Information promoting innovation is dispersed across the websites of ministries, agencies, NGOs and innovation centres and so on, and integrated innovation websites could spread information to firms more efficiently (p.371)

- **Assessing Cost per Job of Policy Measures:** Innovation events are being used to help to raise awareness on business innovation benefits, but largely focus on a small subset of firms, namely high-tech start-ups (p.370), where the cost of job creation is relatively high (e.g. €22k per job in the Serbian Innovation Fund) (p.371)

- **Increasing Western Balkans' Regional Cooperation:** regional centres of excellence to promote collaboration between science, technology and industry may engage Serbia well with European smart growth approaches (p.371).

2 International Findings on Business Incubator Development of Relevance to the Republic of Serbia

There is an extensive body of literature describing the emergence of business incubators across the world, providing an extensive range of models, tools, benchmarking, detailed study, and development recommendations. It is beyond the scope of this study to report in detail on these here[18]. To provide brief international context to the present study of Serbian business incubators we present some stylised key findings from some core international studies of business incubation.

The Telefonica analysis of business incubators and accelerators[19], produced as a contribution to European Commission Start-up Europe initiative[20], highlights that business incubation is still a growing trend in business support, and between 2007 and 2013 the number of European accelerators and incubators rose by nearly 400%.

Asking the question 'Aside from money, what is the single most important necessity for a start-up?' it found that the three most important needs that business incubators can support are: 1) mentoring support (25%); 2) marketing support (15%) and 3) co-working space (13%). These three core support measures account for more than half of the total needs identified as the main priority by clients.

A distinction is made between business incubators and accelerators, with main characteristics of each as follows:

Types	Batches/ Cohorts	Equity Taken	Idea Sourcing	Physical Space	Mentorship	Investor Meetings	Funding	Time Limit	Average Stay	Geographical Footprint
Incubator	No	No	External	Yes	Yes	Some-times	No	No	1-2 years	All over Europe
Accelerator	Yes	Minority Stake	External	Some-times	Yes	Yes	Yes	Yes	3-12 months	Main city hubs

Table 1. Key Features of Business Incubators and Accelerator Programmes

Source: Telefonica (2013) The Accelerator and Incubator Ecosystem in Europe

[18] A more detailed, recent comprehensive literature review on business incubation is available through the Erasmus+ funded project Start-up Promotion for Economic Resilience (**http://www.super-project.eu/gap_assess-ment.php**).

[19] Telefonica (2013) The Accelerator and Incubator Ecosystem in Europe.

[20] **https://ec.europa.eu/digital-single-market/en/start-up-europe**.

UBI-Global carry out regular impact and performance analysis business incubators and accelerators, covering more than 50 countries, their latest findings for 2019-20 are due to be published in December 2019. Based on their 2017-18 assessment[21], they identify three core areas for improvement of business incubator service portfolios:

- Supporting access to markets – developing core focus on processes for successful market access: value identification to identify insight into consumer behaviour and market trends; value creation through collecting research data to support product and service development; and value communication through outlining clear, commercial value propositions;
- Supporting technology transfer – providing a practical, strategic approach to technology transfer where the business incubator can help act as an intermediary to bridge the gap between academia and commercial market;
- Hiring the right people – making sure that there is cultural fit within the business incubator staff and associates hired for program delivery so that it aligns well with the type of innovative, risk-taking entrepreneur-focused cultures that entrepreneurs, potential entrepreneurs and entrepreneurial students are looking for from business support.

The recent Erasmus+ project 'SUPER'[22] provides a useful means of comparing our Serbian study results with European findings covering business incubator development in the UK, Spain, Belgium, Italy, Slovakia and the Czech Republic, from their study in 2017. Amongst the relevant findings, we note that developing the regional ecosystem is seen as the most important goal of business incubators.

Top 3 goals of business incubator

% of total	All Incubators	University Incubators	Non-University Incubators
To develop a regional ecosystem supporting early ventures and/or to enable people to start their business in the region.	50%	52%	48%
To select and support scalable high-growth ventures.	45%	45%	45%
To help students realize their business ideas.	42%	55%	28%
To support regional development and job creation.	32%	27%	38%
To support social entrepreneurship.	18%	21%	14%
To support commercialization of knowledge and technologies developed at the university.	16%	24%	7%
To match start-ups to corporates who will have interest in their skills /resources/ technologies.	13%	6%	21%
To support the development of specific sectors.	11%	15%	7%
To provide students with practical experience which develops life and career skills.	11%	12%	10%
To help disadvantaged communities / individuals with projects.	6%	3%	10%
Other.	10%	6%	14%

Table 2. Main Goals of European Business Incubators

Source: SUPER survey report, March 2017

[21] UBI-Global (2017) Impact and Performance of University-linked Business Incubators and Accelerators – World Benchmark 17/18.

[22] **http://www.super-project.eu/project.php**.

There are different combinations of accelerator programmes and traditional business incubator approaches, with some incubators combining these, others running them separately, and others still having a completely different approach.

	All incubators	University incubators	Non-university incubators
Type of Incubator	**(n=62)**	**(n=33)**	**(n=29)**
Incubator only	50%	45%	41%
Neither incubator nor accelerator	22%	15%	31%
Both incubator & accelerator	18%	24%	10%
Accelerator only	10%	3%	17%

Table 3. Different Forms of Business Incubation Models in Europe
Source: SUPER survey report, March 2017

In terms of service provision, the most commonly provided services are:

	All incubators	University incubators	Non-university incubators
Service provided	**(n=62)**	**(n=33)**	**(n=29)**
Office space	94%	88%	100%
Networking	79%	85%	72%
Pre-start-up courses	61%	72%	48%
Mentoring	56%	58%	55%
Links to external investors	44%	42%	45%
Business competitions / hackathons	40%	51%	28%
Funding	34%	27%	41%
Consultancy	34%	24%	45%
Other	16%	21%	10%

Table 4. Main Services Provided in European Business Incubators
Source: SUPER survey report, March 2017

A core purpose underpinning this study of Serbian business incubators is to determine what value-added services can be added to upgrade performance. As we shall see in our reporting on findings, most Serbian business incubators are small, with a limited management, administration and technical support staff. We want to know, therefore, what types of issues business incubator managers should focus on most, given such limited resource. Providing evidence on core factors that business incubators should focus on developing, the top five success factors identified amongst business incubators in the 'SUPER' survey are:

- Business development and training activities;
- Connections to the wider business community;
- Quality of applicants to the business incubator;
- Clarity of mission and strategy; and
- Incubator brand and reputation.

To provide some evidence on likely future trends in business incubator development in Serbia, we note the findings from the recent comprehensive analysis of business incubators

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and accelerators in the United Kingdom[23]. Whilst the situation in the UK and Serbia are quite different, the long history and extensive development of business incubator and science park models in the UK make it relevant for identifying how the business incubator network could develop into the future. The UK study identifies four key emerging trends in business incubation, relevant to Serbia:

- **Very rapid growth in the number of programmes and facilities** – whilst both business incubators and accelerators are expanding, the rate of growth of accelerator programmes indicates that there may be more of these than business incubators within a short time. For Serbia this suggests that opportunities for accelerator development need to be addressed alongside development of business incubators.

- **Expansion of incubators and accelerators outside the capital city** – business incubators have always been more geographically spread than accelerators, which have tended to cluster around the capital. As competition for the best start-up applicants has increased, however, new programmes are moving towards less crowded environments in other cities, accessing different sectors and clusters. The relevance to Serbia is in understanding the different business models and growth drivers between accelerators and more classical business incubators: "the different business model of incubators, which is based on charging rent or fees to residents, rather than competing for and taking equity in the best start-ups, creates different dynamics between them" (p.43). Linking incubator and accelerator growth with the smart specialization strategy would provide a strategic approach to managing this challenge.

- **The rise of corporate accelerators** – more than half of accelerator programmes in the UK are now run by corporates, with the main explanations being: attempts to create entrepreneurial mind sets among corporate employees; enhancing innovative brands that are attractive to customers, partners and future employees; speeding up business problem solving at lower risk, and accessing new capacities and market access channels to expand into future markets. Serbia is also experiencing notable growth in corporate acceleration and business incubation by corporates in the past few years, and a key policy challenge will be to foster further growth, whilst managing risks of political and regulatory capture by corporate interests.

- **Diversification of incubation models** – the main emerging trend is the expansion of online programmes. Within this expansion, growth of accelerator programmes appears to be more significant than growth in virtual incubators. A new trend is the emergence of simplified pre-accelerator programmes (these provide very early stage support to entrepreneurs who may join an accelerator programme in the future), and 'start-up studios' (these generate multiple, parallel ideas in-house before spinning them out). As has been seen in recent years in Serbia, international business support ideas are quickly copied and adapted in the local market. As we also note, however, the start-up ecosystem in Serbia is already beginning to create overlapping solutions. The risk, therefore, is that introduction of new models and approaches too quickly could create a very confusing landscape of available support options to any aspiring entrepreneur. Careful planning and management of business incubation support development, and extensive networking amongst key stakeholders are key to minimizing this risk.

[23] Bone, J et. Al. (2017) Business Incubators and Accelerators: The National Picture, BEIS research paper number 7, Department for Business, Energy and Industrial Strategy, London.

3 Overview of Serbian Business Incubator Development

In this section, we briefly outline the main background features behind the development of business incubators in Serbia, before presenting a definition of business incubators used in the analysis within this study. The importance of this definition is in providing explanation as to why there can be no definitive answer to the question of exactly how many business incubators there are in Serbia.

To further make this point on the challenges of accurately determining the current number of business incubators, we make a distinction between business incubators as legally constituted organizations, and processes of business incubation that can be used to categorize any organization as a form of business incubator. This provides context to assessment of the current status of legal and operational definitions of business incubators in Serbia, explaining why this distinction between the legal and operational characterisations of business incubators is important.

3.1 Brief overview of the development of the BIs in the Republic of Serbia

Strengthening the elements of business infrastructure is mentioned in many strategic and programme papers of the Government of the Republic of Serbia, the provincial government of the AP Vojvodina and also in many local councils' strategic documents.

Given the poor economic indicators of the Serbian economy and weak infrastructure after 2000, especially in the field of innovation, the government prioritised work on building business infrastructure that would enable economic development, with particular focus on development of SME competitiveness. Business infrastructure in Serbia typically implies business incubators, clusters, industrial zones and technology parks, active at various territorial levels and located across the country. Within these varied forms, the business support infrastructure provides both capacity building services as well as physical space for performing business activities[24].

In general, previous analysis of business incubators in Serbia shows that, despite the significant investment in developing physical capacities and accompanying infrastructure, they are typically insufficiently and ineffectively implemented, and there are also serious gaps in terms of management team development inside the incubators, as well as conspicuous lack of a long-term and systematic approach to funding these systems by the state.

Establishment of business incubators was often not followed by their intensive development. In many cases, the services provided by the incubators are minimal, focused on administrative and accounting services. As a result of these problems and the surge of economic crisis and political, oftentimes local challenges, the expected full impact of the investments into business incubators has not been achieved. A low number of "incubators" are able to organize trainings and workshops for tenants, and only a few of them provide service users with core innovation services, such as intellectual property protection.

This generalised conclusion should be interpreted with some caution, however. There are no comprehensive analyses of business incubators in Serbia, and our assessment of historical development is therefore based on a variety of sources. The present study probably provides the most complete overview to date.

[24] For an earlier review see Dragiša Mijačić, (2011.): „Analiza stanja poslovne infrastrure u Republici Srbiji" ("The Analysis of the State of Play with Business Infrastructure in the Republic of Serbia"), NARR, p. 8.

Amongst prior contributions, analyses, and evaluations, we can usefully mention the following that provide useful insights, conclusions and recommendations that are largely still valid: World Bank comparative assessment in 2014 of business incubator performance, including analysis of the Business Technology Incubator of Technical Faculties Belgrade (BITF)[25]; comparative Western Balkan regional analysis of various Serbian business incubator's performance within an assessment by the Tempus WBC-Inno project published in 2014[26]; mapping of Serbian business incubators by Inter in 2017[27]; unpublished regional analysis of science parks and business incubators by the EU4Tech project[28].

The 2017 Inter mapping of business incubators noted ongoing fluctuation in the number of BIs in Serbia, with four new incubators having been established in the period 2011-2017, and 10 having shut down or changed their purpose. In total the study identified 20 business incubators operating in Serbia with an average of four employees each, with Belgrade having the greatest incubator density. This ever-changing scene highlights the difficulties in developing any definitive mapping on the state of business incubation.

Perhaps of greatest direct relevance to the current study is the WBC-Inno's "Strategic Development Plan for Business Incubators and Science and Technology Parks in Western Balkan Region" , which contains a detailed benchmarking exercise of selected BIs operating in the Western Balkan Countries (WBC) Region. This provides a good picture of selected Serbian BIs' performance within a regional context, albeit now slightly dated. Nine BIs in Serbia responded to WBC-Inno's invitation and provided the relevant data to participate in the benchmarking exercise.

These include incubators located in Subotica, Novi Sad, Zrenjanin, Belgrade (Palilula), Kragujevac, Užice, Kruševac, Prokuplje and Vranje. Based on this analysis, nine key challenges for business incubator development were identified that still largely hold true today:

1. Increasing understanding of roles and importance of business/technology incubators and science parks among state and local decision-makers;
2. Preventing 'brain drain', by motivating young and well-educated people to start businesses;
3. Having the appropriate legal framework and subsidies for development of innovative companies with export potential;
4. Improvement of networking at all levels;
5. Improvement of visibility and promotion of existing BIs;
6. University support through entrepreneurship courses aiding start-ups and spin-offs;
7. Development of mentoring programmes for inventive students whose ideas can be incubated in BIs;
8. Establishment of the evaluation system for monitoring of BIs/STPs performances;
9. Organization of joint competitions and awards.

3.1.1 Definition of Business Incubators

In practice, business incubation can take many forms, within many organisational settings - all incubation projects have very specific features related to their purpose, sources of funding, management structures, target groups and services provided, and types of incubation. Consequently, strictly defining business incubators can be difficult, and not necessarily helpful towards understanding the many different roles of various institutional structures that support early-stage business development within an entrepreneurship ecosystem. Business incubation as a process can be defined separately from business incubators as an organisational structure that enables it to flourish, in support of start-up and early stage business development.

As a result of this, there is no single definitive answer on exactly how many business incubators currently exist in Serbia. The estimate of the number of active business incubators depends on the specific definitions used. Within this study, we clearly set out the basis on which we have estimated the scope of business incubators within the Republic of Serbia, and the estimates and findings reported in this study are valid in relation to the specific assessment and evaluation criteria used.

[25] Infodev (2014) Impact Assessment of Business Incubation Models in Eastern Europe & Central Asia, Finance and Private Sector Development Department. Washington, DC: World Bank.

[26] WBCInno (2014) Strategic Development Plan for Business Incubators and Science and Technology Parks in Western Balkan Region, Tempus.

[27] http://www.lokalnirazvoj.org/sr/publications/details/53.

[28] https://eu4tech.eu/category/components/science-parks-incubators/.

For the purposes of EUBID project the *business incubator* is defined as a shared infrastructure with office and/or laboratory facilities that seeks to provide its incubatees with a strategic, value adding business development services. Thus, business incubators, science and technology parks, co-working spaces, hubs, start-up centres, corporate incubators and acceleration initiatives are included in the initial assessment.

3.1.2 Distinguishing between incubation as a process and business incubators as organisations

Business incubation processes relate to a core function of enabling young companies to overcome the start-up stage as successfully as possible, to promote entrepreneurship and provide their contribution to reduction of the share of companies that do not "survive" the initial stages of business operations[29]. The processes can be facilitated through the provision of an appropriate package of services and support facilities, in a number of different ways, depending on needs of different target audiences.

Business incubation processes can therefore occur in various organisational settings, such as classical business incubators, virtual incubators, innovation centres, science and technological parks, coworking spaces, makerspaces, managed workspace. An illustration of this is provided in figure 2, where the shaded area shows where processes of business incubation are most likely to occur.

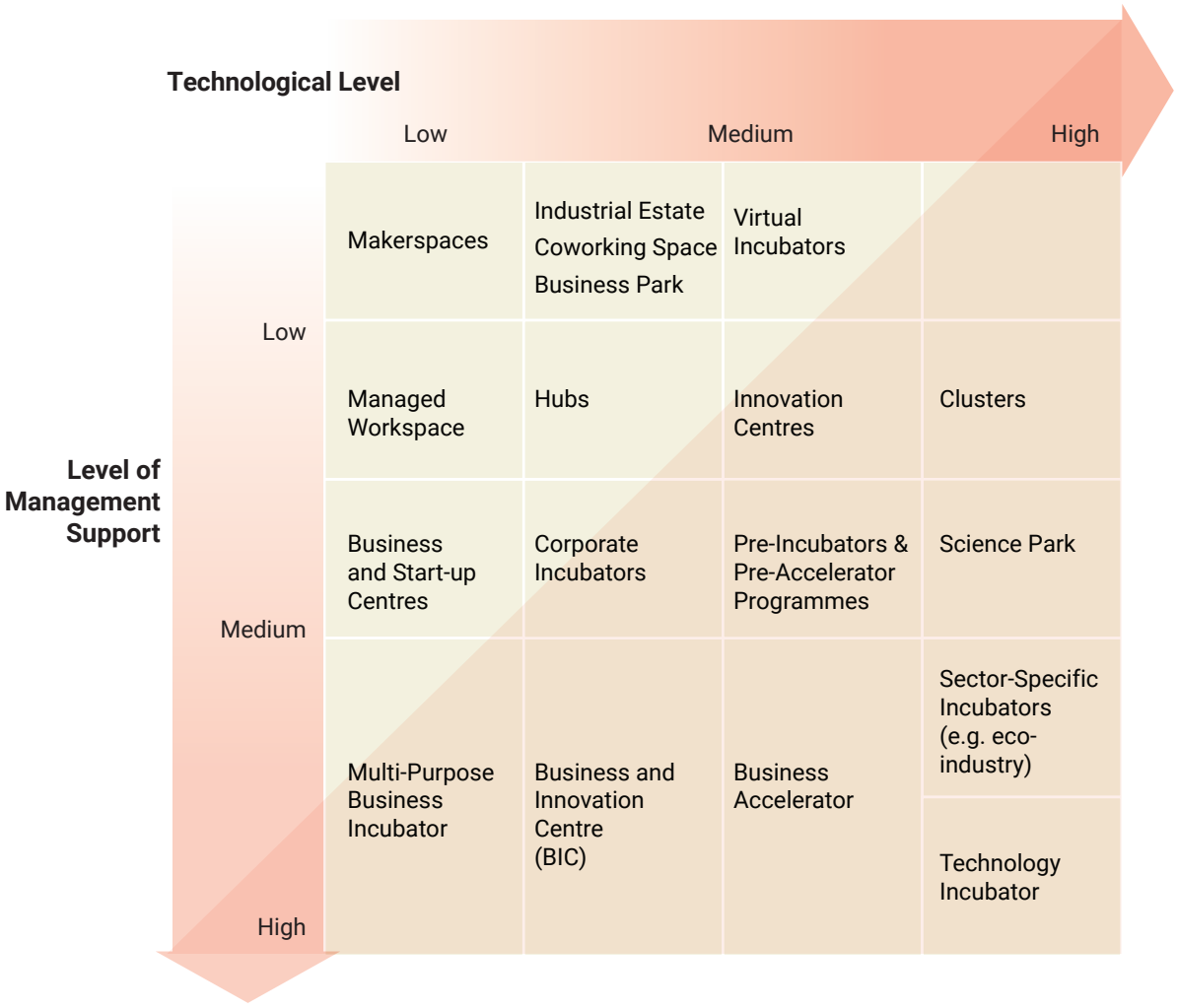


Figure 2. Likelihood of Business Incubation Processes in Different Business Support Organisations

Source: Adapted from Figure 2 in the CSES (2002) Final Report on Benchmarking of Business Incubators for the European Commission

[29] Ibid.

Even within these varied organisational types there may be:

a) sectoral variation and focus, e.g. between production, technological and mixed-type incubators;

b) variation in social objectives targeted, e.g. incubators for social entrepreneurship, green industry and circular economy development;

c) client orientation, e.g. university incubators targeted at research faculty and students, corporate incubators linked with activities of private companies.

Within the WBC-Inno strategic planning exercise for development of business incubators in the Western Balkans, business incubators have been characterised as adapted premises intended for development of business incubation programs, aiming at the enhancement of the success rate of developing micro-, small and medium-sized enterprises in their early stages, establishment and development of business operations. Business incubators provide the users of their premises with preferential terms of lease, as well as the services developed in accordance with their needs and demands of the market and of the business environment.

The incubators offer a specific type of mentoring and a set of programs that depend on the very type of incubator and the type of "tenants" supported in their development. They may be deemed, if exercising their function fully, as an "intervention" in the business life of a company. Incubators differ by types of companies they develop, by the range and level of services provided to direct and indirect beneficiaries[30].

Business incubators are considered to be a "friendly" or conducive environment for the development of SME-sector companies. What most frequently comes across as benefits for the users of business incubator services are: pricing of business premises, with a time-limited lease that is lower priced than free-market options (most often progressively growing tantamount to the free-market one over time); provision of business services through the assistance of the incubator management in the process of company registration, business plan development, elaborating on ideas and protection of intellectual property; as well as core business administration services such as accountancy support and administrative/secretarial services. Also, some incubators are able to offer their own contact network in the process of necessary fund raising for the company's business operations or for marketing services. The prices of all services provided are typically lower than those in the free market, sometimes subsidized by institutions, and at times resulting from volunteer mentoring support[31].

Business incubators provide a number of micro-, small and medium-sized enterprises with the possibility to start their business in a favourable environment, by using all the benefits of sharing the premises with legal entities of similar profile.

Along with the premises they use, companies can most often use other common areas on very favourable terms, such as presentations halls, meeting rooms and the necessary communication infrastructure (access to the internet and telecommunication devices). As such, they constitute a link between the public and private and they are a specific form of subsidy[32].

An illustrative model of the business incubation process, relevant to both incubators supporting high-tech and self-employment, is shown below in Figure 3.

[30] See for example, Mandic, V et al. (2014), "Strategic Development Plan for Business Incubators and Science and Technology Parks in the Western Balkan Region", WBCInno, Tempus, Kragujevac.

[31] Ibid.

[32] Ibid.

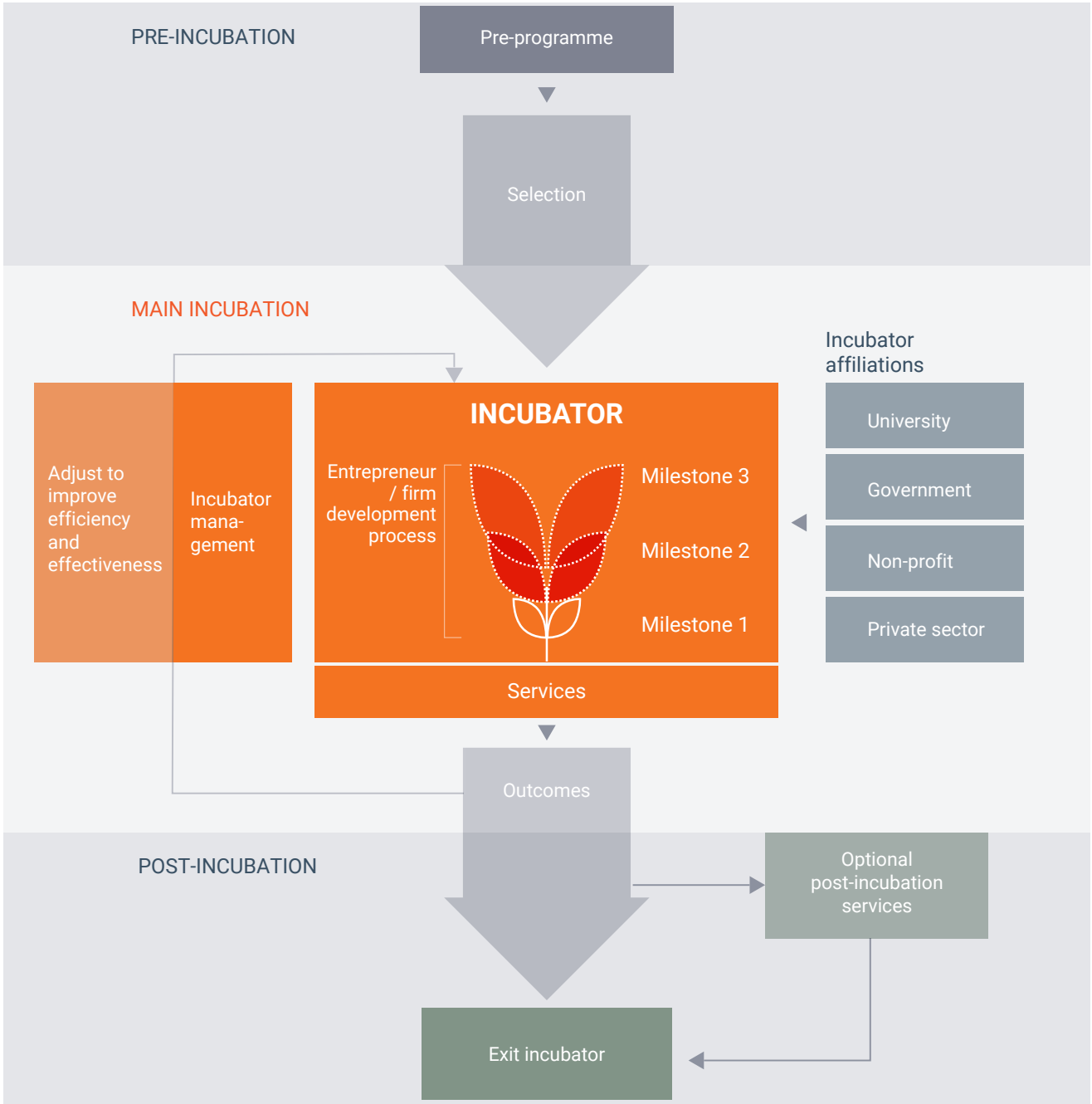


Figure 3. Typical Model of the Business Incubation Process

Source: EC/OECD (2019) Policy Brief on Incubators and Accelerators that Support Inclusive Entrepreneurship, p.5

3.1.3 Is there a unified legal definition of business incubators in the Republic of Serbia?

A frequent basic shortcoming in establishing business incubators is the difficulty in achieving financial self-sustainability. Thus, they are commonly set up with ongoing public policy subsidy, at least partly, due to economic justifications based on either minimising market distortions and failures, creating local economic development multiplier effects, or promoting innovation as a public good.

The common need for subsidy, perhaps explains the result that the prevalent form of incubators in Serbia have been linked to public sector institutions, although an emerging trend now is in the development of privately-owned incubators, and various emerging forms of public private partnership.

As organisational structures that may require financial policy support, a clear legal basis for providing this support needs to be defined. Presently, this is clearly set out within the Law on Innovation Activity[33], which regulates the fundamental principles and organized approach to the application of scientific knowledge, invention and innovation, aiming at launching the development of the Republic of Serbia. A set of four main organizational types are defined for the provision of infrastructural support to innovation activity that can be registered with the Ministry of Education, Science and Technological Development: 1) business and technology incubator; 2) science and technology park; 3) organization for stimulation of innovation activities in priority fields of science and technology; and 4) centre for transfer of technologies.

Business and technology incubators are defined as companies established for the purpose of rendering infrastructural support and networking of research and development organizations, or innovation organizations and business entities. Under Article 21, pertinent solely to business and technology incubators, they are specified as companies whereby "the core activity of which is making available, for remuneration, business premises, administrative, technical and other services to newly established companies, no longer than five years upon their establishment"[34].

This provides the legal basis for operational definitions that can be used within strategies, programmes and projects to either clarify eligibility for various financial and non-financial support programmes, or evaluate results and performance.

The Ministry for Education, Science and Technological Development is responsible for monitoring their work and registering them with the corresponding Innovation Activity Register. The Minister approves of the Rulebook defining the requirements for registration with the Innovation Activity Register, which implies the rights to funding, on certain terms, from the national or local level, or from funds. For registration with the Innovation Activity Register it is required to have a minimum of three employees with a university degree, at least three tenant companies dealing with innovation and production based on high-level knowledge and new technologies, to have no less than 20 square metres of office space per tenant, adequate equipment and internet access, conditions for providing technical and consulting services necessary for company development at an early stage, as well as human resources and infrastructural potential for organizing training sessions[35].

Business incubators are typically eligible to participate in a number of Serbian and European programmes. For these, operational definitions of business incubators are required that are consistent with the legal basis. Currently the eligibility for participation in programmes by individual incubators is assessed through administrative compliance on a case by case basis, with little reference to their inclusion (or absence) in the Ministry of Education, Science and Technological Development's register of business infrastructure. This demonstrates an operational weakness in the current usefulness of the register, suggesting a need either for revision, or of adapting it on the basis of additional supplementary legislation that incorporates a wider form of organisational types into the legal definition of business infrastructure supporting innovation, as well as infrastructure supporting local economic development and self-employment.

3.2 Current Strategic Support to Business Incubators in Serbia

There are currently three main Serbian Government strategies guiding the development of business incubators in Serbia, as part of the broader business infrastructure[36].

The Strategy for supporting the development of small and medium enterprises, entrepreneurship and competitiveness for the period from 2015 to 2020 (SME Strategy) highlights the significance of business infrastructure for development of SMEs, with empha-

[33] Law on Innovation Activity (Official Gazette RS, No 110/2005, 18/2010 and 55/2013).

[34] Ibid 37.

[35] The Rulebook on Registration of Innovation Activity and on Deletion from the Register, "The Official Gazette of the RS", no. 16/2011.

[36] Previous strategy and Government actions are well described in the Danube-IncoNET Policy Mix Peer Review Report on Serbia.

sis on: business incubators, industrial parks/zones and technological parks. In addition to technological incubators and STPs, it also stresses the role of other forms of business incubation, especially for local economic development in small regions, such as: linking industrial zones with business incubation support; business incubation facilities targeted at special interest groups in an area (e.g. young people, women, Diaspora returnees to hometowns, creative industries, IT sector, etc).

Within the SME Strategy, Pillar 4, Dimension 1, identified the following relevant measures for business incubators: further development of business services for SMEs; further development of trainings for potential and existing entrepreneurs. Pillar 4, Dimension 2 defines the main basis for support to BIs, including: systemic regulation of business infrastructure development; development of business infrastructure for innovative SMEEs; and development of business infrastructure for regional and local economic development. Pillar 6 addresses issues of relevance to developing BIs for self-employment support, targeted at development and promotion of entrepreneurial spirit and encouraging of women's entrepreneurship, youth entrepreneurship and social entrepreneurship.

The Strategy of Scientific and Technological Development of the Republic of Serbia for the period from 2016 to 2020 - research for innovation defines six main objectives, of which the most relevant to business incubator development is the strengthening of the connection between science, economy and society to encourage innovation. A number of measures defined within the current Action Plan[37] directly address this, including: improving the transfer of knowledge and technology and encouraging the establishment of companies based on scientific research ("spin-off") and the advancement of the innovation ecosystem (Measure 2.3); establishing Public Private Partnership (PPP) (Measure 2.4); establishment and development of science-technology parks at university centres that will enable the creation of new jobs / companies and transfer of technology (Measure 2.5.1).

Within the Action Plan for 2018 of the Strategy for the development of the information technology industry for the period 2017-2020 the objective on 'support for IT entrepreneurship and start-up projects' defines support for development of the ecosystem through support programs for associations (IT clusters, start-up hubs, technology incubators) (Activity 1.2.1).

Related to the IT Industry Strategy, the Plan of Priority Objectives and Activities of All State Administration Bodies and Government Services for IT Sector Improvement in Serbia is supporting projects to construct and develop Science and Technology Parks, including business incubation facilities, and strengthen capacities of scientific and research institutes to develop high-tech cooperation with the economy.

3.2.1 The potential role for Business Incubators in Self-Employment Promotion

We can additionally mention other important strategies focused on specific entrepreneurship and self-employment topics. For instance, the National Youth Strategy for 2015-2025 aims to encourage job creation, self-employment and entrepreneurship among young people and proposes measures to encourage the development of self-employment programs, youth entrepreneurship and youth co-operatives, especially aimed at developing

Active Employment policy measure	Included in the measure							
	2014		2015		2016		2017	
	Total	Women	Total	Women	Total	Women	Total	Women
Training for the development of entrepreneurship			12,029	5,515	12,660	5,802	12,469	5,663
Self-employment grants	850	363	3,803	1,688	3,594	1,563	3,680	1,848

Table 5. Active Employment Policy Supporting Self-Employment

Source: National Report on Social Inclusion and Poverty Reduction in The Republic of Serbia

[37] Government conclusion 05 Broj: 660-6063/2018-2.

high-performance and technology intensive industries (information technology sector, industrial and technology parks, etc.).

Similarly, national reporting on social inclusion and poverty reduction[38] highlights a need for further stimulation of youth entrepreneurship, as well as reporting on many active labour market actions in support of varied groups in Serbia, such as women and Roma. The Table 5 indicates the considerable numbers of persons participating in the programmes, and suggests a clear opportunity for closer collaboration between business incubators and active employment policy in furthering the development of self-employment focused business incubators.

The main support to self-employment for social inclusion and poverty reduction is delivered via the National Employment Service and consists of information and advisory services, entrepreneurship development training, as well as support in the first year of business through mentoring and specialist training at the NES, regional development agencies, etc. At present, business incubators are not fully integrated into these delivery structures.

The National Employment Service training to start your own business[39] is currently provided through business centres, and delivers two-day covering the following topics: economic motivation for entrepreneurship; defining a business idea; the first steps in business; legal aspects of business; taxes and contributions for entrepreneurs; business plan development. Unemployed persons who decide to start a business, after completing the training, can apply for a self-employment subsidy.

Self-employment subsidies are defined in the annual Action Plan of the National Employment Service[40], and the support provided includes professional assistance and resources in the form of self-employment subsidies. Application is on the basis of regular public calls[41], with separate calls for different target groups (i.e. Roma, disabled etc.).

For the current year, the self-employment funds (2019) are granted to unemployed persons, in the form of a subsidy. Priority in granting self-employment subsidies is given towards young people up to 30 years of age, redundant employees, Roma, people with disabilities, women. Different levels of subsidy apply to self-employment of redundant employees, and self-employment of persons with disabilities.

As we commented previously, recent European Commission / OECD policy briefing[42] suggests a greater role can be played by business incubators in social inclusion, and it provides some guidance on how this could be best achieved. As a first step, the greater integration of the work of the National Employment Service on supporting self-employment could be more strategically aligned and integrated with the existing business incubators' service portfolios.

3.3 Phases of Business Incubator Development in Serbia

The emergence of the network of business incubators in Serbia can be broadly divided into three major phases, namely:

- Early phase of BI development (2004-2007);
- National recognition and support (2007-2011);
- New wave initiatives and increased private sector involvement (2012 to date).

3.3.1 Early phase of Business Incubator Development, 2004-2007

As early as 2001, the Government of the Republic of Serbia established the National Agency for Development of Small and Medium-Sized Enterprises and Entrepreneurship, with the main goal of supporting the development and interests of the SME sector. By the end of the same year, with donor assistance, the first regional agencies and centres for support to SME sector development got established.

The first business incubation initiatives in Serbia emerged around 2004-5 and were supported by donors, namely by the Norwegian Government, the Organisation for Security and Co-operation in Europe (OSCE), Austrian Development Agency (ADA), German Government and the US Agency for International Development (USAID). Operations of these incubators were fully financed by the project and the major challenge was how to secure the continuation of the BIs operations after donor funded projects are finalised.

[38] Third National Report on Social Inclusion and Poverty Reduction in The Republic of Serbia: The Status of Social Exclusion and Poverty Trends in the Period 2014–2017 and Future Priorities.

[39] **http://www.nsz.gov.rs/live/trazite-posao/edukacija/obuka_za_zapo_injanje_sopstvenog_posla.cid257.**

[40] **https://www.minrzs.gov.rs/sr/dokumenti/predlozi-i-nacrti/sektor-za-rad-i-zaposljavanje.**

[41] **http://www.nsz.gov.rs/live/info/konkursi/konkurs-nsz.**

[42] EC/OECD (2019) Policy Brief on Incubators and Accelerators that Support Inclusive Entrepreneurship, Luxembourg: Publications Office of the European Union, doi:10.2767/092345.

3.3.2 2nd phase - National recognition and support, 2007-2011

Recognition and support of business incubators by the Government of Serbia emerged fully in the period 2007-2011. The Programme for Development of Business Incubators and Clusters in the Republic of Serbia 2007-2010 was adopted by the Government of the Republic of Serbia, which proposed the establishment of at least 15 business incubators and the National Association of Business Incubators as an umbrella organisation. Business incubators' programme development was designed to enable the creation of new jobs, opening of new enterprises and increase the competition through development of entrepreneurship, with the purpose of the equal regional improvement of employability in economically undeveloped areas. The National Investment Plan (NIP) was used for the construction, reconstruction and adaptation of the incubator buildings.

Analysis by the National Agency for Regional Development in 2011 identified a primary goal of developing business infrastructure development as: "an overall economic development at the local, regional and national level, with a special emphasis on polycentric development". The actions of business infrastructure entities are often geographically limited, mainly to territories of municipalities and towns, but sometimes also to wider geographic units such as districts and regions.

3.3.3 3rd phase - New wave initiatives and increased private sector involvement, 2012-2019

From 2012 to 2016, there were limited direct mechanisms at the national level for financing of business incubator operations. An emerging policy agenda was refining ideas on how support could be improved and upgraded.

The 2012 roundtable on "the importance of business incubators, clusters, industrial zones and domestic economic development parks"[43] organized by Belgrade Chamber of Commerce, the National Agency for Regional Development (NARR), the Institute for Territorial Economic Development (InTER) and the Association First Women noted the significant role of incubators in developing entrepreneurship and start-ups. It recommended training incubator staff to provide a wide range of services, as well as identifying and developing good relationships with potential stakeholders for future incubator initiatives. A change of incubator focus was suggested, moving away from physical incubation services towards a wider provision of business services. A need for extension of the network to cover locations where no incubators currently exist was identified. Alongside this, it was recommended that incubators should focus on specific sectors and build on identified comparative and competitive advantage in the environment in which they operate. To achieve this, strong integrated linkages between incubators, clusters and local economic offices would need to be developed. Recommendations were made on defining a national standard for business incubators, to regulate activities and measure performance. A public private partnership formula for funding was proposed of 33% - 33% - 33%, ie.one third of the cost of incubators to be financed from state / local organizations / programmes, EU funds and billing services.

A Roadmap for Business Incubators, Science & Technology Parks in Serbia was prepared in 2014[44], forming the basis for specific activities on business incubation defined within the current SME Strategy. It includes six main priority areas: awareness raising as key prerequisite for disseminating the concept of BIs; supporting capacity building through training on how to set up BIs; fostering collaboration, networking and coordination to promote BIs; implementing selected BIs to serve as multipliers to future BI initiatives; ensuring viable financial funding structures for BI initiatives; and other activities in support of business incubation.

As a follow-up to the roadmap, a Manual[45] for the establishment and development of business incubators was developed jointly between NARR and GIZ in 2015. This provides practical guidance to the management teams, and associated stakeholders of both existing and planned business incubators.

In the 2012-16 period, the incubators that were supported through the National Investment Plan, were operated by local governments as their formal founders that were directly funding them[46]. Local government units mostly continued to support and fund the incubators. The biggest share of operating expenses was funded from local government budgets. The funds allocated for incubators in the budgets of local governments amount to RSD 3 to 7 million annually.

[43] See **http://www.lokalnirazvoj.org/upload/News/Documents/2012_07/Preporuke.pdf**.

[44] Supported by GIZ Access.

[45] приручник за оснивање и развој пословних инкубатора, Belgrade 2015.

[46] This does not refer to business incubators operating at the territory of Vojvodina.

Separately from the broader National picture, through the *Programme for Economic Development of the Autonomous Province Vojvodina 2014-2020*, the Development Agency of Vojvodina is financing the work of business incubators on an annual basis. The success of this funding mechanism is evident, since all business incubators created through Vojvodina Government programme are functional, have tenants and directly contribute to the development of entrepreneurship and small and medium-sized enterprises.

Further impetus towards implementing support to business incubators came from changing strategic direction at national level. Government policy has been significantly updated and reformed in recent years, and is strongly supportive of entrepreneurship, as demonstrated by the original Year of Entrepreneurship in 2016, and the introduction of the new Minister without portfolio responsible for innovation and technological development.

By establishing of the Development Agency of Serbia (RAS) in 2016, the possibility for direct financing of business incubators operations from the central level was reintroduced. The Development Agency of Serbia announced the first call for proposals in 2016, and after that it renewed the call by inviting incubators to submit projects. This financial mechanism has directly contributed to the development of entrepreneurship through enabling the incubators (both those for self-employment and entrepreneurship development as well as IT incubators) to implement activities such as trainings, courses and other forms of business advisory, and physical facilities in support of business development.

Also, through economic development projects managed by the RAS the incubators have the possibility to prepare various surveys and analyses, and the infrastructure works on their new or existing premises could be funded through projects, along with the furnishing of the incubator premises for new tenants. It should be mentioned that other legal entities that are eligible to apply can also compete for the funds with the Development Agency of Serbia and the approval of project funds depends on the quality of project proposal.

RAS Program of Financial Support to Business Incubators for 2016 included specific focus on supporting new and existing incubators and development of new incubator support services. Results of this programme included 4 new business incubation facilities being supported: Timok Youth Center (Pomak); Business Innovation Center Kragujevac; BI Kruševac; and Project START(ME) virtual incubator, In addition, support services for MSMEs were developed within 7 business incubators through 9 projects: BIC Užice, BI Kragujevac, BI Novi Sad, BI Kruševac, Nova Iskra, Bački Petrovac, BIC Yumco Vranje. Additional support was provided to IHIS Zemun and STP Belgrade.

RAS Program for Economic Development Improvement Support[47] in 2017 focused on improvement of services provided to the end-users of business support organisations. It supported seven business incubator projects, including an IT incubator in Vranje, development of women's entrepreneurship in Kruševac, entrepreneurship promotion in Prokuplje and IT and digital competencies in Nova Iskra.

During 2018 and 2019 the Cabinet of the Minister of Innovation and Technological Development announced calls for proposals for business incubators that can submit their projects for three large programmes realised by this government body:

- Support Programme for Opening Regional Innovation Centres,
- Promotion and Popularising of Innovation and Innovative Entrepreneurship Programme and
- Support for Development and Promotion of Women Innovation Entrepreneurship Programme.

Business incubators can apply for funds in all three programmes, and the Cabinet of the Minister of Innovation and Technological Development has allocated significant funds for these programmes.

In parallel to the Government programmes, a number of private initiatives of HUBs and co-working emerged, mainly in bigger cities, especially Belgrade, which were also supported partially by donor funding. These established and commenced operations in a relatively short time, quickly achieving full occupancy and waiting lists of potential tenants. For example, in 2014, USAID financially supported the establishment of ICT Hub in Belgrade with USD 300,000[48]. The goal of establishing the centre was to identify and promote the innovative IT companies and individuals developing the ideas by providing technical assistance for them.

In 2019, USAID continues to support the second IT incubator in Belgrade - Impact Hub. Impact Hub is implementing the three-year programme

[47] http://ras.gov.rs/uploads/2017/04/poziv.pdf.

[48] https://www.usaid.gov/news-information/fact-sheets/ict-hub—-global-development-alliance.

WE Founders[49] (total value of USD 1 million) in cooperation with the Association for Female Affirmation and Association of Businesswomen in Serbia. This initiative should contribute to higher participation of women in IT business while the project partners will provide direct mentorship and financial assistance for women who launch their IT start-ups.

It should be mentioned that other international donors had occasionally supported the work of business incubators in Serbia. For example, the German development agency GIZ has supported the work of incubators, whilst through some EU funded projects (RSEDP2, Exchange) some of the activities of the business incubators were financed. In 2011 and 2012, the Dutch organisation SPARK assisted the work of several business incubators, such as the ones in Vranje, Kragujevac, Užice, Prokuplje and Belgrade by funding the specific projects in the value of EUR 100,000 for each.

A further, recent trend that should be remarked on is the emergence of corporate support to business incubation, as private initiatives, such as Telekom Srbija's support of StartIT, and the establishment of Delta Holding's 'Delta Business Incubator'. Such initiatives are developing rapidly, with new models emerging such as the September 2019 opening of the Nordeus Hub, as a free co-working space in New Belgrade, created to support the gaming industry.

In conclusion, during this third phase we have observed the emergence in recent years of a very vibrant and dynamic start-up scene, especially in Belgrade and Novi Sad, but extending to other regions, including: mature incubator facilities, providing a wide range of facilities and business incubation services, such as the Science and Technology Park Zvezdara in Belgrade[50]; new incubation and acceleration services being introduced into Serbia, and the emergence of strong associations and NGOs supporting business incubation[51]; new forms of business acceleration, such as the model being developed in the Biosens Digital Innovation Hub for agriculture Accelerator[52]; introduction of corporate incubation and acceleration programmes[53]; increased coworking space adapted to specific sectoral needs (e.g. Nova Iskra for the creative industries, and STARTIT Centres across Serbia in ICT); leading international business accelerator programmes, such as Techstars, 500 Start-ups and Seedcamp exploring opportunities in Serbia; and emergence of international strategic partnerships, such as Startit's Start-up Academy partnering with Google Launchpad during 2018 to become the first European accelerator within Google's programme[54].

3.3.4 Conclusions for the Next Phase of Business Incubator Development

Serbia's will launch the new smart specialisation strategy in the 4th quarter of 2019[55]. It recognizes business incubators as participants in the Strategy implementation processes and a next phase of business incubator development should focus on provision of long-term and sustainable financing[56]. To identify the challenges to be faced in effectively using smart specialisation to drive business incubator development towards network hubs and areas of innovation, we need to understand how business incubation has developed in Serbia historically. The analysis presented shows some clear trends, together with gaps in knowledge that this study seeks to fill. It also highlights the importance of not only considering business incubators in relation to innovation, but also carefully considering their contributions to local economic development, self-employment and job creation more broadly. This justifies, at least in part, our analytical separation between studying business incubators that support high-tech and those supporting self-employment.

The development path of business incubators and science and technology parks in any country typically goes through a number of stages. Within the science park and business incubation literature, a commonly agreed model identifies three main stages: i) development of core facilities and premises and basis services; ii) improving services and interaction with and between clients; and iii) enhancing strategic linkages and partnerships the innovation ecosystem.

A commonly proposed fourth generation model for development currently being actively pursued by members of the international association of science parks and other business incubation organisations is that of 'areas of innovation'[57], linking ecosystems of cities and regions – especially

[49] https://belgrade.impacthub.net/we-founders.

[50] https://ntpark.rs/en/services/#stp-services.

[51] Such as the Digital Serbia Initiative, and Serbian Entrepreneurs, SPEA, and SEE-ICT.

[52] https://biosens.rs/?page_id=10936&lang=en.

[53] https://www.ekapija.com/en/start-up/2197719/companies-making-increasingly-more-investments-in-startups-quick-technology-development-creating-synergy.

[54] http://en.startit.rs/google-to-grow-the-serbian-startup-scene-in-partnership-with-startit/.

[55] https://pametnaspecijalizacija.mpn.gov.rs/.

[56] https://s3platform.jrc.ec.europa.eu/documents/20182/223684/R%26I+Strategy_Serbia.pdf/52210381-13c9-450b-8001-c3a257b8549e.

[57] See, for example, Parry, M (2018) The Future of Science Parks and Areas of Innovation: Science and Technology Parks Shaping the Future, World Technopolis Association, https://doi.org/10.7165/wtr18a0430.18.

Generation	Suggested value	Significant offering
1st Generation	Economies of scale and job creation	Office spaces and premises
2nd Generation	Value adding services and training	Coaching and training
3rd Generation	Enhanced access to external resources	Networking and linkages

Table 6. Main Phases of BI evolution

through smart specialisation approaches[58]. This movement towards 4th generation business incubator and science park models, together with use of smart specialisation tools and approaches[59] to enhance the roles of business incubation within innovation ecosystems, is both timely and important for successful exploitation of the sector-focused strategic approach that smart specialisation will encourage.

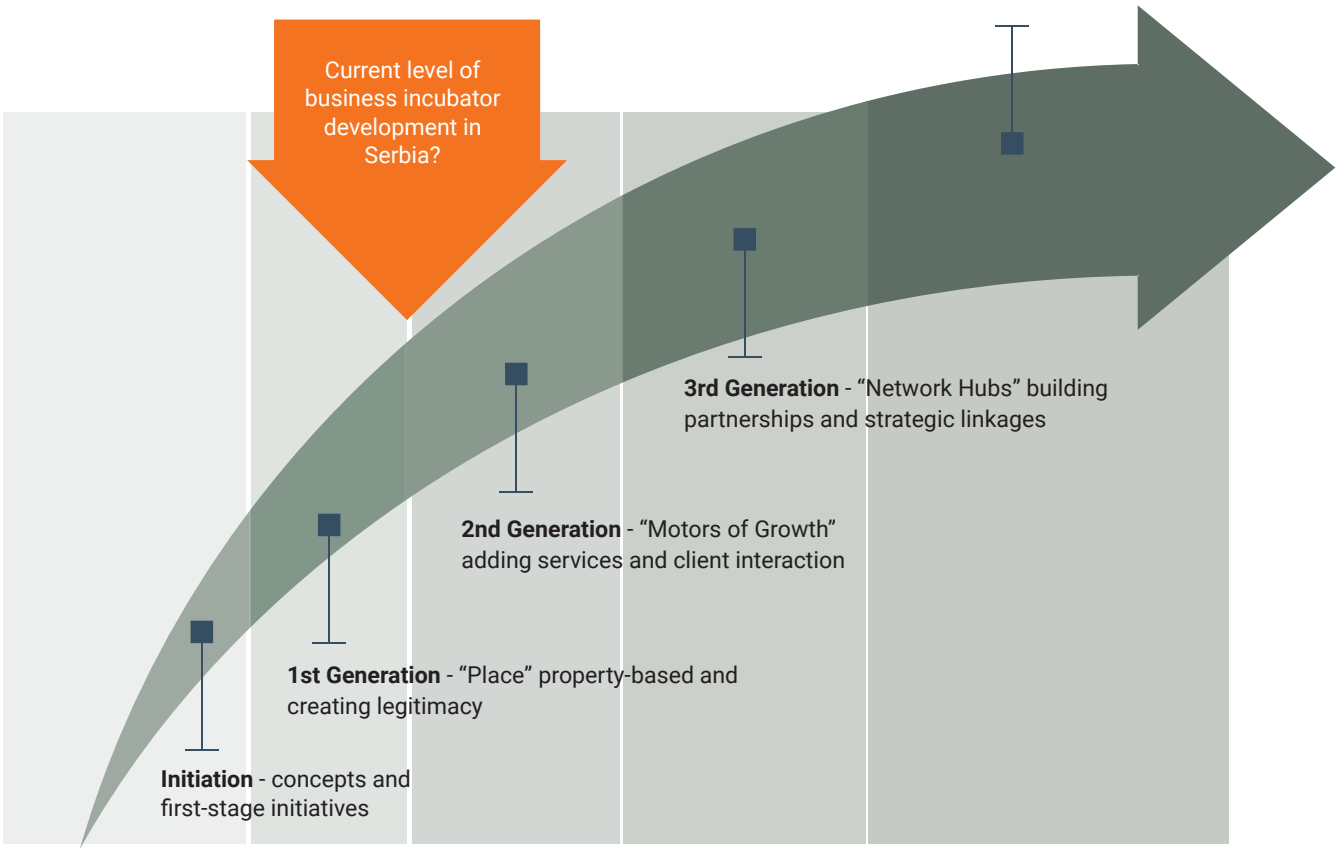


Figure 4. Current Standing of Serbia in a Phased Development of Business Incubation

[58] Nauwelaers, C., Kleibrink, A. and Stancova, K. (2014). The Role of Science Parks in Smart Specialisation Strategies. S3 Policy Brief Series, No. 08/2013. European Commission, Joint Research Centre, Institute for prospective Technological Studies, Spain.

[59] See for example the knowledge repository of the S3 Platform **https://s3platform.jrc.ec.europa.eu/knowledge-repository.**

4 Approach Used to Assess Serbian Business Incubators (BIs)

Whilst previous chapters have set out the history of, and framework for business incubator development, we turn now to the specific data and analysis of results from the study. In this chapter we outline the main methods used to collect and analyse the data, whilst the subsequent two chapters provide a) the main assessment findings for the supply side of the business incubators' providing services to clients, and b) the demand-side assessment of needs of client and tenant companies.

4.1 Definition of the BI assessment sample

To obtain updated information regarding the number of functional BIs, the TAT conducted desk-based research, on-site visits, as well as consultations with the Project manager during the inception phase. The initial list was comprised of business incubation initiatives that were identified during desk research of publicly available information, previous surveys and studies, contributions from MoE, RAS, other sources, including donor activities and international projects that are being implemented in the Republic of Serbia.

The exercise helped to identify **56** initiatives in Serbia that could be regarded as business incubator initiatives. The follow-up direct phone calls confirmed that **40** initiatives are operational[60]. The number was continuously updated after site visits.

In order to provide an updated information regarding the number of functional BIs and their service portfolio all the business incubation initiatives were planned to be visited and quick scan questionnaires filled-in during the visits. In practice, 36 business incubators were actually visited, and the data and information from 35 were validated and provides the base evidence and information source.

4.2 Choosing an appropriate assessment method for the BIs

At a global level, there are various methods for assessing incubators, and estimating the incubation impact for the community, incubators and tenant companies. There are many challenges involved in evaluating BI performance.

Assessment methodologies that are recognised internationally as good practice methods and that are used by world renowned organizations and associations have been analysed[61] and Peer review approach as best addressing the purpose of the in-depth assessment of BIs with different background and experience was chosen.

4.2.1 Peer review methodology

Peer Review (PR) is the evaluation of work by one or several persons (peers) with similar competences to the producers of the work. It constitutes a form of self-regulation by qualified members within the relevant field. Peer review methods are deployed to maintain standards of quality, improve performance and provide credibility.

[60] As of writing of the Study, there were several initiatives in a process of establishment under a Support programme for the Establishment of Regional Innovation Startup Centres of the Cabinet of the Minister without portfolio for Innovation and Technological Development. The following Regional Innovation Startup Centres (RISC) were not visited and are not taken into account in the Study: RISC of Subotica and Faculty of Economics in Subotica, RISC Gorni Milanovac and ICT Hub, Arilje Municipality and Secondary school "Sveti Achilije", RISC of City of Užice and Regional Development Agency Zlatibor, RISC of Municipality Priboj and Industrial Park Priboj, Municipality of Svilajnac and ICT Hub.

[61] We are aware of many other evaluation and benchmarking tools and methods, and report on four common ones after having reviewed other options. These are selected as ones that have been found to be highly relevant and useful in practitioner circles.

The objectives of PR assessment of business incubators are to:

1. Increase and improve the management capacity;
2. Contribute to interconnected organisations with strengthened performance, leading to more optimal utilization of resources;
3. A more even and professional level of operation will enhance the ability to manage infrastructure efficiently and to deliver results;
4. Contribution to improvement of governance structures and organisational set-up;
5. Networking of BI initiatives.

The PR approach puts more emphasis on the exchange of information and the generation of insights during the meetings with BI management and stakeholders (municipalities, universities, tenant companies, alumni, etc.) instead of acquiring the information via online questionnaires only.

The selected PR methodology allows a flexible approach. The full description of the method, including how it might be replicated in future assessments is included as Toolkit 3 in the Appendices.

Core advantages of the PR approach include the following:

- It is non-normative – capturing each organization in its context;
- It focuses on strengths, and "opportunities for improvements";
- It is an open, sharing, and empathising approach.

Most importantly, through engagement with business incubators, it enables development of practical guidelines and recommendations for the further development of each business incubator participating in the process.

4.3 Criteria for inclusion in BI assessment and the BI assessment sampling base

Whilst our initial analysis had confirmed that 40 initiatives are operational, **20 BIs** were selected for inclusion in the in-depth assessment – Peer Review assessment.

After the on-site visits, information from the business incubation initiatives was further analysed and assessed in order to select them for further inclusion in BI assessment activities (Peer Reviews). This narrowing down of the overall sample towards a group that were assessed in detail was carried out to identify a core group of business incubators that could most benefit from service portfolio upgrade and capacity building with EUBID project support.

In order to address objectives of the Business Incubators Enabled to Provide High-value Services to SMEs project, business incubation initiatives were grouped in two categories:

1. Business incubators supporting high-tech start-ups;
2. Business incubators supporting self-employment;

Business incubation initiatives providing business and innovation support services (co-working spaces, accelerators, HUBs, etc.) were also included in further assessment.

A distinct set of criteria was used for each category for further selection of BI initiatives. Each criterion has a value grid of 3, where 1 is weak, 2 – moderate, 3 – strong. Every incubator was given values for each criterion and the average rank indicates if the BI initiative is suitable for further inclusion in the in-depth assessment as well as capacity building and service portfolio upgrade.

The average value below 1,5 indicates that the BI initiative is not suitable (red mark) for further inclusion in project activities, the average value equal or above 1,5 and below 2,5 indicates that the BI initiative is suitable (yellow mark) for further inclusion with additional conditions, average value of equal or above 2,5 – the BI initiative is recommended (green mark) to be included into further project activities.

The methodology used for sampling and selecting the BIs are presented in the Tables below.

No.	Criteria	Value		
		1	2	3
1.	Commitment of the BI management to participate in project activities*	no	maybe	yes
2.	Links with universities/faculties	Non-existing	In process	Strong
3.	Links with corporates/industry	Non-existing	In process	Strong
4.	Number of clients actively using services of the BI	>3	>10	≤10
5.	Share of clients with own product/service, %	>10	>25	≤25
6.	Share of start-ups/university spin-offs in total of client portfolio, %	>10	>25	≤25
7.	Number of staff providing business and innovation support services	>2	>4	≤5
8.	Standardized business incubation process is in place	Yes, no need to upgrade / no, no need to have one	Yes, need to upgrade	No, but needs to have one
9.	Innovation and technology development support services	Not interested	Project based, moderate need among clients	Internal, strong need among clients
10.	Maturity of BI initiative	<10 years, no changes can be expected	>10 years, willing to change	>3 years, needs operational support
11.	Networking of BI initiatives	Not interested	Moderate interest	Strong interest
12.	Membership in international networks	Not interested	Moderate interest	Strong interest
13.	Links to investor communities	Weak	Moderate	Strong

Table 7. Selection criteria for BIs supporting high-tech start-ups

* - prerequisite for BI's participation in project activities

No.	Criteria	Value		
		1	2	3
1.	Commitment of the BI management to participate in project activities*	no	maybe	yes
2.	Number of clients actively using services of the BI	>3	>10	≤10
3.	Share of clients with own product/service, %	>10	>25	≤25
4.	Number of staff providing business support services	>2	>4	≤5
5.	Standardized business incubation process is in place	Yes, no need to upgrade / no, no need to have one	Yes, need to upgrade	No, but needs to have one
6.	Maturity of BI initiative	<10 years, no changes can be expected	>10 years, willing to change	>3 years, needs operational support
7.	Networking of BI initiatives	Not interested	Moderate interest	Strong interest
8.	Special focus / existence of the programme that supports Youth, Women Entrepreneurship, and/ or minorities	No	No, but is in the process	Yes
9.	Initiative or already established cooperation with the industry/corporate in the region	No	No, but is in the process	Yes

Table 8. Selection criteria for BIs supporting self-employment

* - prerequisite for BI's participation in project activities

5 Performance assessment of the BIs in Serbia

As we have already noted, attempting to provide a definitive statement on the current status of business incubator development is a challenging task. For this reason, an innovative combination of methods has been used within this study, as described in the previous chapter. Data was collected using a combination of methods including desk research of existing databases on web and paper reports, short on-site visits, peer review approach and individual interviews.

The study results provide insight into the following core questions:

- How many business incubators are currently operational in Serbia?
- What are the key characteristics of a) business incubators supporting high-tech, and b) business incubators supporting self-employment?
- How can business incubators increase and improve their management capacities?
- What is required to contribute to interconnected organisations with strengthened performance, leading to more optimal utilization of resources?
- How can business incubator operations be improved to enhance the ability to manage infrastructure efficiently and to deliver results?
- What improvement of governance structures and organisational set-up are required?
- How can networking of BI initiatives be enhanced?
- How willing are business incubators to work with the EUBID project to enhance their provision of high value-added services for clients?

In addition to assessing the status and performance of business incubators, the study also considers demand-side needs of tenant companies within business incubators, as the basis for a gap assessment of mismatch between current supply of services and client needs.

Based on the findings, individual Roadmaps were prepared for 20 business incubators, and a set of overall conclusions and recommendations has been prepared (Chapter 7). To support the implementation of the recommendations, three technical Toolkits have also been developed, on the basis of our findings.

There are three main components to the findings that we report on within this chapter:

- An overview of main findings on the number of identified business incubators;
- Basic assessment of business incubator activities, and selection of those included for further in-depth study; and
- Detailed assessment of a group of 20 business incubators.

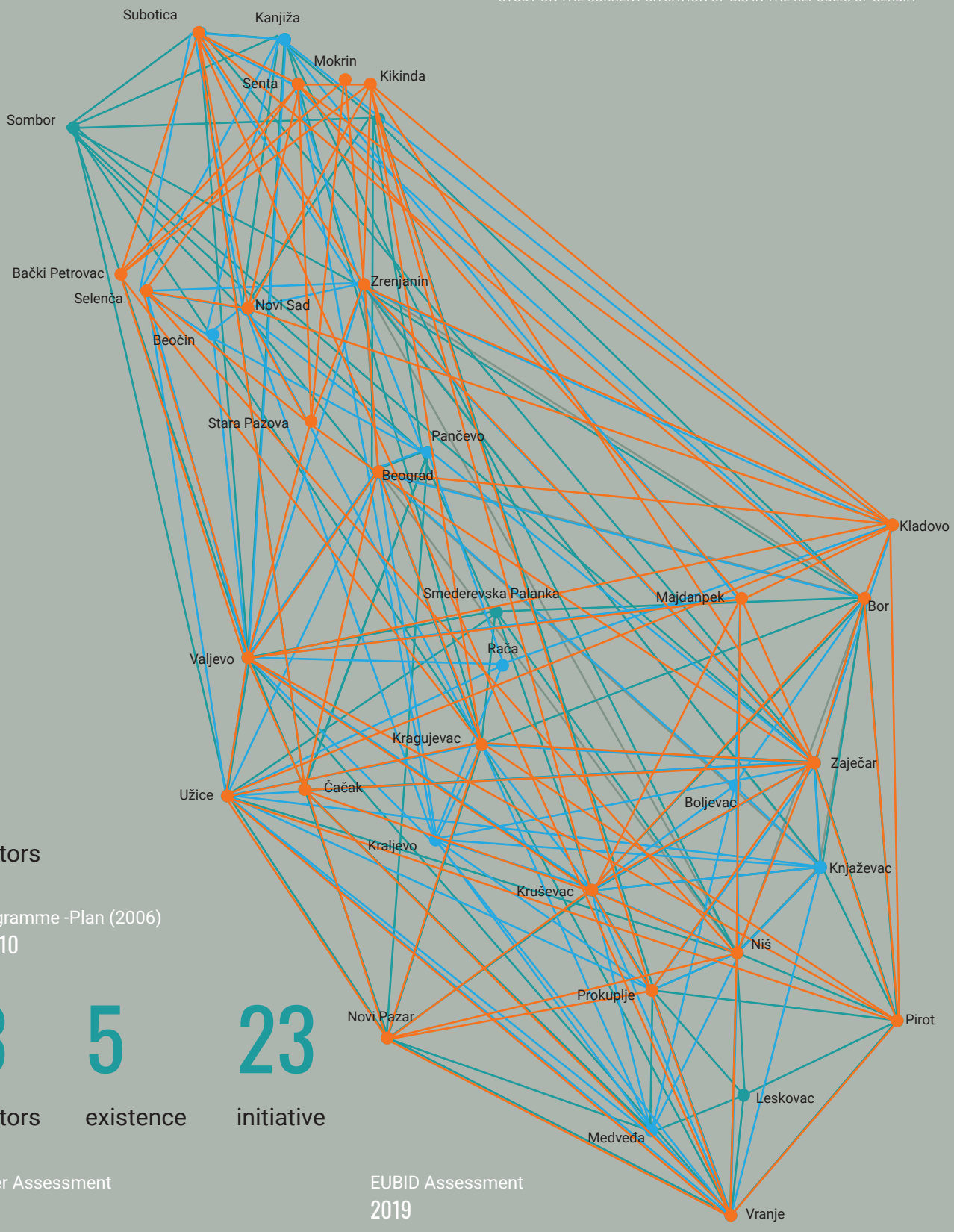
In the following chapter, we will supplement this with the findings on business incubator tenants, and identify the service delivery gaps.

5.1 How many operational Business Incubators are there in Serbia?

As stated in section 4.1, the research confirmed that **40 initiatives are operational**. These are listed in the table below, and current status compared with three earlier points in time.

When comparing the situation between 2006 and 2019, our desk-based assessment identifies the following pattern across Serbia regions of the development of both BI planning initiatives, and realised BIs, shown in Table 12[62]. We would particularly remark that the latest 2019 assessment indicates many new BIs coming into existence in the past few years in all regions of Serbia, whilst several planned initiatives have never been developed.

[62] It should be noted that the information from previous periods is sometimes only partial, and did not therefore reflect a complete picture of the situation at that time. For this reason, interpretation of this table should be treated with caution and regarded as indicative of key trends.



Until
2006

5
incubators

GoS Programme -Plan (2006)
2007-2010

23
incubators

5
existence

23
initiative

NAD/Inter Assessment
2011

27
incubators

19
existence

8
initiative

EUBID Assessment
2019

40
incubators

Figure 5. Mapping of Business Incubators in Serbia in 2019

Name	City	Until 2006	2007-2010 - GoS Programme - Plan (2006)	NARD/Inter Assessment (2011)	EUBID Assessment (2019)
Vojvodina					
Sombor	Sombor		initiative		
Kikinda	Kikinda		initiative		
Beočin	Beočin			initiative	
Kanjiža	Kanjiža		initiative	existence	
Pančevo	Pančevo		initiative	initiative	
BI Zrenjanin	Zrenjanin	existence	existence	existence	existence
BI Novi Sad	Novi Sad		initiative	existence	existence
BI Subotica	Subotica		initiative	existence	existence
BIC Bački Petrovac	Bački Petrovac			initiative	existence
BI Senta	Senta			existence	existence
Inofstud Hub	Subotica				existence
Slovan Progres	Selenča				existence
Innovation Start-up centre SP	Stara Pazova				existence
Mokrin House	Mokrin				existence
Belgrade					
Belgrade-Lazarevac	Belgrade		initiative		
STP Grocka	Belgrade		initiative		
Belgrade Novi Beograd	Belgrade		initiative		
Rača	Rača			existence	
Korrak	Belgrade	existence	existence	existence	
BI of Tech. Faculties	Belgrade		initiative	existence	existence
Belgrade STP	Belgrade			initiative	existence
Nova Iskra	Belgrade				existence
ICT Hub Bg	Belgrade				existence
Impact Hub Belgrade	Belgrade				existence
Vinča Belgrade	Belgrade				existence
StartIT	Belgrade				existence
Starup center	Belgrade				existence
In Center	Belgrade				existence

There is a relatively even spread in number of BIs across the regions (Belgrade – 9; Vojvodina – 9; Southern & Eastern Serbia – 12; Šumadija & Western Serbia – 10). It is interesting to note that, whilst the highest number of BIs is in the bigger cities (Belgrade – 9 BIs, in Kragujevac – 4 BIs, and Niš – 5 BIs), there are, however, many BIs in smaller places, and some are very successful. It is also worth remarking that most of the BIs in Belgrade are relatively young, and established only few years ago.

The geographic distribution of the 40 operational business incubators identified by the study is shown in the map below, together with earlier 2011 assessment when 27 incubator initiatives were identified (19 operational and 8 at the initiative stage).

Name	City	Until 2006	2007-2010 - GoS Programme - Plan (2006)	NARD/Inter Assessment (2011)	EUBID Assessment (2019)
Southern & Eastern Serbia					
BIC Niš	Niš	existence	existence	existence	
Knjaževac	Knjaževac	existence	existence	existence	
BI Zaječar	Zaječar		**initiative**	existence	
Medveđa	Medveđa		**initiative**	existence	
BIC Bor	Bor	existence	existence	existence	existence
BIC Yumco Vranje	Vranje		**initiative**	existence	existence
BIC Prokuplje	Prokuplje		**initiative**	existence	existence
BIC Kladovo	Kladovo			**initiative**	existence
BI Majdanpek	Majdanpek			**initiative**	existence
Boljevac	Boljevac				existence
Starup Center Niš	Niš				existence
Think Innovative	Niš				existence
Deli Niš	Niš				existence
Pomak	Zaječar				existence
NiCAT	Niš				existence
No Limit Hub	Niš				existence
ZIP Center Pirot	Pirot		**initiative**		existence
Leskovac	Leskovac		**initiative**		
Šumadija & Western Serbia					
Kraljevo	Kraljevo			**initiative**	
Smed. Palanka	Smed. Palanka		**initiative**		
BIC Kragujevac	Kragujevac		**initiative**	existence	existence
BI Kruševac	Kruševac		**initiative**	existence	existence
BIC Užice	Užice		**initiative**	existence	existence
BI Valjevo	Valjevo		**initiative**	**initiative**	existence
STP Čačak	Čačak		**initiative**		existence
NIT Novi Pazar	Novi Pazar		**initiative**		existence
BDC Kragujevac	Kragujevac				existence
MIND	Kragujevac				existence
KG Coworking	Kragujevac				existence
Coffice Užice	Užice	existence	existence	existence	existence
E - existence (Quick Scan Questionnaire and assessment relates to-35)		E-6	E-6	E-20	E-40
I - initiative			I-23	I-8	
T - total		T-6	T-29	T-28	T-40

Table 9. Overview of the BIs developoment in Serbia 2006-2019

5.2 Basic assessment of BI initiatives

Thirty six of the forty identified business incubation initiatives[63] were visited, and data was collected through quick scan questionnaires filled-in during the visits. These visits were designed to collect basic information about BIs, including their business models, service portfolio and insights into their expectations, needs, gaps in operation, etc. The visits also helped to verify correspondence of desk-research and follow-up calls with on-the-ground assessment of the real situation.

All visited BI initiatives were categorised and divided into two groups:

1. Business incubators supporting high-tech start-ups;
2. Business incubators supporting self-employment.

The list of visited BI initiatives and their attribution to specific group is provided in the table below:

No.	Incubators supporting high-tech start-ups	Incubators supporting self-employment
1.	BI Novi Sad, Novi Sad	BI Valjevo
2.	ICT Hub, Belgrade	BIC Prokuplje
3.	Science and Technology Park Čačak	Pomak, Zaječar
4.	Start-up Centre, Belgrade	BIC Bački Petrovac
5.	In Centar, Belgrade	BIC Bor
6.	Science and Technology Park Belgrade	BI Majdanpek
7.	BI of Technical faculties, Belgrade	BI Senta
8.	Nova Iskra, Belgrade	BI Zrenjanin
9.	Infostud Hub, Subotica	BIC Užice
10.	Impact HUB, Belgrade	BI Subotica, Subotica
11.	Vinča, Belgrade	BIC Yumko, Vranje
12.	Startap Centre, Niš	ZIP Centar Pirot
13.	Think Innovative, Niš	BIC Kladovo, Kladovo
14.	NIT Novi Pazar, Novi Pazar	Deli, Niš
15.	MIND, Kragujevac	Business Development Centre, Kragujevac
16.	BIC Kragujevac, Kragujevac	StartIt*, Belgrade
17.	BI Kruševac	Coffice, Užice
18.	Innovation Start-up Centre Stara Pazova	KG Coworking, Kragujevac

Table 10. Visited BI initiatives during initial assessment phase

* - there are six branches of StartIt located across Serbia and mostly partnering with other business incubation initiatives in those locations. The locations are Novi Sad, Vršac, Šabac, Subotica, Zrenjanin and Inđija.

[63] 4 initiatives were excluded from further involvement into project activities die to different reasons: private and confidential, recent change of management, still in development or not meeting criteria as a business incubator.

5.3 Description of the applied methodology

Whilst our reporting so far has focused on the quick scan questionnaires for core statistical survey data, which we have supplemented with findings from other sources and the process of peer reviews, the most detailed data has been collected from a smaller sample of 20 BI initiatives. These all participated in a process of Peer Reviews, which led to development of individual Roadmaps for each participating BI. These are included as a separate electronic annex with a restricted audience[64].

The methodology for the Peer Reviews assessment of BIs is available as stand-alone compoent to the study.

5.4 Basic assessment and BI selection results

As it has been presented already the network of business incubators in the Republic of Serbia covers the whole country and operations of different groups of BI initiatives to some extent contribute to economic development in all regions.

As provided, BI initiatives were evaluated using BI selection criteria described in section 4.3 and data were used from quick scan questionnaires. Evaluation grids were developed which permit the assessment of incubators both individually and regionally (whole Serbia). This Study does not report on the full assessment results on individual BI initiatives, though these are available through quick scan survey data stored in excel spreadsheets, and as Roadmaps to the individual participating business incubators.

Accumulated results show that all visited BI initiatives positively accepted the incentive to assess current situation in the country and were keen to contribute to and participate in the upcoming evaluation process. To be specific, only 6 (2 BIs supporting high-tech start-ups and 4 BIs supporting serf-employment) BI initiatives did not commit to contribute to the Study. It shows how important and timely the process was.

Based on the rankings from the selection criteria, 10 BIs supporting high-tech start-ups and 10 BIs supporting self-employment were selected for in-depth analysis. The Tables below present an aggregated picture of the evaluation according to the selection criteria, whilst respecting the confidentiality of individual BIs. The final column shows the average scoring across all of the BIs assessed. The colouring within the tables links to the scoring criteria within section 4.3, and illustrates individual scores per criterion for individual BIs:

No.	Criteria	Value			
			1	2	3

What is noticeable is that no single BI scored perfectly. As we scan from left to right across each of the tables, we can see a successively lower scoring by individual BIs, illustrating the usefulness of this ranking method. It is also important to observe the many differences between the BIs in the individual criteria in which they scored highly (or less so). This provides an initial basis for identifying key issues that were addressed further through the Peer Reviews.

We have ranked the areas where each type of BI scored most highly on aggregate. For the HT BIs, seven criteria were scored at two or more (in order): Networking of BI initiatives; Number of clients actively using services of the BI; Share of clients with own product/service, %; Links with corporates/industry; Links with universities/faculties; Membership in international networks.

For SE BIs, five criteria were scored at two or more (in order): Networking of BI initiatives; Number of clients actively using services of the BI; Initiative or already established cooperation with the industry/corporate in the region; Maturity of BI initiative.

64 The full set of Roadmaps has been made available to the Ministry of Economy, whilst individual Roadmaps have only been disseminated to the BI that they refer to.

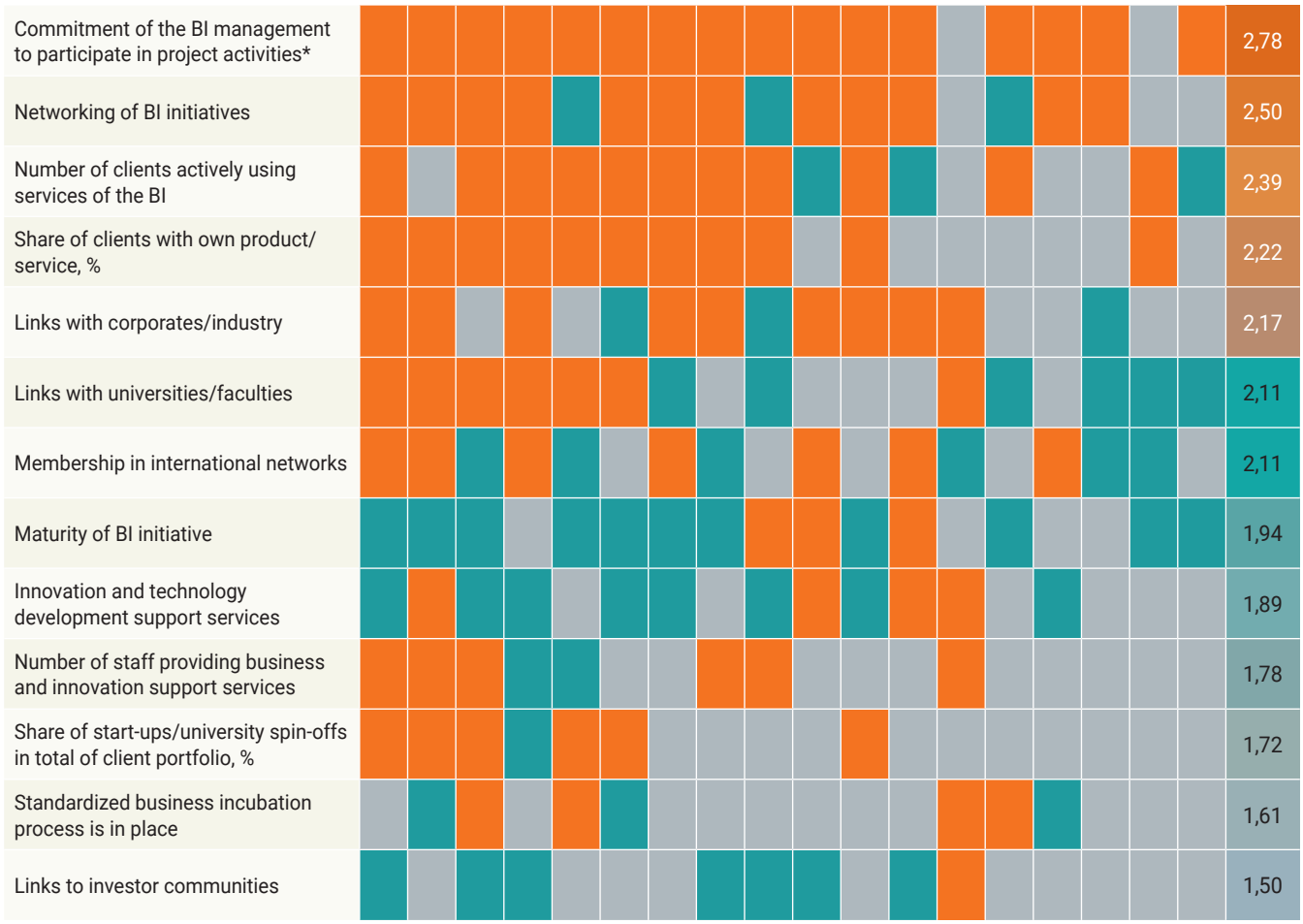


Table 11. Summary of rankings of BI supporting high-tech start-ups

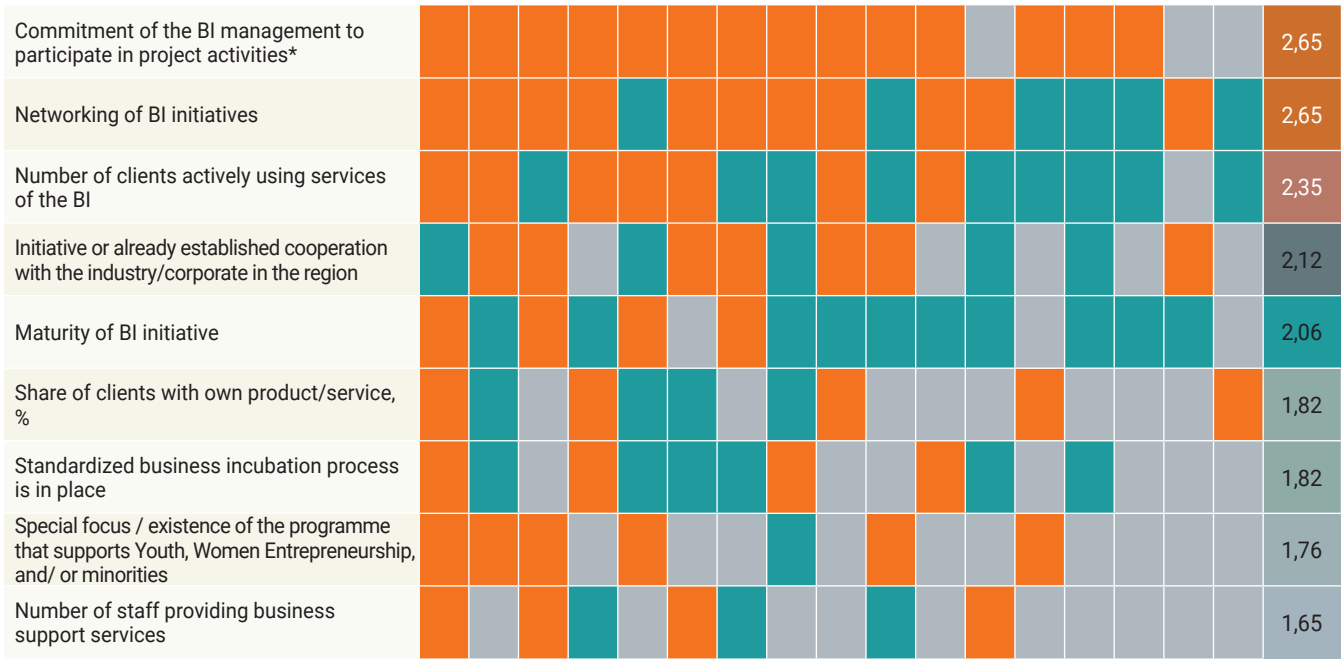


Table 12. Summary of rankings of BI supporting self-employment

Based on the rankings on the above-mentioned criteria 10 BIs supporting high-tech start-ups and 10 BIs self-employment were selected for in-depth analysis through the Peer Assessment method, to produce individual BI Roadmaps.

The initial aggregated assessment of ranking is presented next. This is in no way intended to provide an overall performance ranking of BIs, but merely provides the basis for the selection of the BIs that undertook the more detailed assessment, and that were anticipated to be most likely to benefit from further EUBID support.

No.	Name of the initiative*	Score	Type of BI initiative
1		2,67	Supporting self-employment
2		2,54	Supporting high-tech start-ups
3		2,54	Supporting high-tech start-ups
4		2,54	Supporting high-tech start-ups
5		2,54	Supporting high-tech start-ups
6		2,46	Supporting high-tech start-ups
7		2,46	Supporting high-tech start-ups
8		2,44	Supporting self-employment
9		2,44	Supporting self-employment
10		2,23	Supporting high-tech start-ups
11		2,23	Supporting high-tech start-ups
12		2,22	Supporting self-employment
13		2,22	Supporting self-employment
14		2,15	Supporting high-tech start-ups
15		2,15	Supporting high-tech start-ups
16		2,11	Supporting self-employment
17		2,11	Supporting self-employment
18		2,11	Supporting self-employment
19		2,11	Supporting self-employment
20		2,08	Supporting high-tech start-ups
21		2,00	Supporting high-tech start-ups
22		2,00	Supporting self-employment
23		2,00	Supporting high-tech start-ups
24		2,00	Supporting self-employment
25		1,92	Supporting high-tech start-ups
26		1.89	Supporting self-employment
27		1,89	Supporting self-employment
28		1,89	Supporting self-employment
29		1,78	Supporting self-employment
30		1,78	Supporting self-employment
31		1,62	Supporting high-tech start-ups
32		1,56	Supporting self-employment
33		1,54	Supporting high-tech start-ups
34		1,54	Supporting high-tech start-ups
35		1,38	Supporting high-tech start-ups
36		1,00	Supporting high-tech start-ups

Table 13. Ranking of BI initiatives

* - names are hidden deliberately due to sensitive data

5.5 Summary findings and results – Supply side analysis of BIs

Based on the assessments of individual business incubators that were carried out, this section presents a summary overview, before more detailed findings are presented. We present the results of the analysis separately for the set of business incubators supporting high-tech, and those supporting self-employment, grouped by four main categories of issues. As will be seen, however, there are many similarities between the two groups of incubators[65].

Basic assessment of BI initiatives, primarily using the short quick-scan questionnaire[66], was used to help collect information needed to update the existing service portfolio of functional BI initiatives. All data was entered into spreadsheets for archiving purposes, and to allow data analysis and interpretation. Further interpretation of the core data was made on the basis of the peer review process, and roadmaps created for each of twenty business incubators that were assessed in detail.

The research conducted on the basis of initial assessment and quick scan questionnaires suggests that incubator initiatives can be distinguished by their ownership: local public institutions, NGOs or private initiatives. The majority of them are project based and implement activities defined by their donor programmes which in turn limits consistency and long-term perspective of services provided as well as mislead clients' expectations regarding services they can get in BIs. Private initiatives though depend on a business model and in most cases the business model often changes depending not only on trends in business support models, but on profit driven basis mostly. Private initiatives therefore tend to be more flexible and agile than public.

5.5.1 Overview of Findings Related to BIs supporting High-Tech Start-ups

Most of the assessed High Tech BIs are attractive to potential clients, and do not experience any problems with deal flow, i.e. attracting tenant SMEs to the incubator. A majority of HT BIs said that more than 25% of their tenant companies have their own products, and are not outsourced by larger companies to deliver some services. Bootstrapping was mentioned as a key issue with IT sector start-ups as their resources are mostly outsourced to develop someone else's products and not their own.

The majority of incubators do not run any structured business incubation program. There are a lot of examples when programmes are available as ad-hoc activities implemented in frameworks of different support and funding programmes.

Links to corporates and large industrial companies are provided to tenants by about half of the BI initiatives. Within internationally leading incubation programs, a gatekeeper function of linking start-ups with corporates is one of core features of successful business incubators, Business incubators can facilitate fruitful collaboration between start-ups and corporations[67]. This is an important feature and role for business incubators to play in Serbia and requires further improvement in most of the cases, and better inclusion and integration into the main service portfolio.

A surprisingly low number of HT BIs (just 6 out of 18) link their tenants with higher education institutions. Considering that these incubators support high-tech business, it is essential for them to develop this service within the portfolio as a value-added service particularly relevant to technological tenants.

Very few BI initiatives supporting high-tech start-ups provide services specifically attributed to technological development. Share of start-up/university spin-offs in total number of client portfolio, number of staff providing innovation support services, innovation and technology development services, links to investor communities all show that either clients are not looking for these services and they are more of general business nature or the services are not promoted enough, so clients are not looking for these services in-house within the incubators.

Highlighting our earlier point (section 3.1.2) on distinguishing between business incubators and business incubation, we would remark that a considerable number of the selected HT BIs are actually set up as co-working space (i.e. Infostud HUB, Nova Iskra, In Centar) and they actually do not plan (at the present time) to become fully fledged business incubators providing the full range of incubation services. This provides a partial explanation as to why they do not have (and do not plan) to establish closer cooperation with Universities.

[65] This may reflect any or all of: a) an artificial classification between the two types, and some misclassification of individual BIs; b) the overall current stage of BI development in Serbia; or c) similar activities and organisation, despite different overall market focus. This is something that should be examined further during the direct support phase of the project.

[66] This was filled-in together with the management of BI initiatives.

[67] **https://ubi-global.com/best-practices-successful-incubator-corporate-partnerships/08/**.

5.5.2 Overview of Findings Related to BIs supporting Self-Employment

Perhaps the weakest point amongst BIs supporting self-employment is the small number of staff working within them providing business support services to tenant clients – 11 out 17 visited BI initiatives have less than 2 team members providing such services.

Self-employment supporting BIs are typically quite small – only 41.1% of incubators have more than 10 tenants. This suggests limited capacities of these incubators in providing an entrepreneurial support role, with most of their focus being on the employment generation and support context. The fact that most of the companies in these BIs do not develop their own products also suggests that nature of businesses in these BIs are oriented more towards service delivery, rather than product/service development where the BIs would have to play a more visible support and delivery role.

Networking of BI initiatives is the main aspect where BIs supporting self-employment expressed a strong interest in improving their performance and delivery of this activity. However, due to lack of resources, both financial and human, they currently lack abilities to get to know other incubators better, and network effectively with them.

5.6 Detailed findings and results – Supply side analysis of BIs

Issues addressed here in the more detailed assessment are broken down by the following main aspects:

Basic Characteristics of the BI

- Age and history of BI;
- Founding partners (shareholders);
- Location of BI;
- Type of BI premises;
- Size of premises and occupation.

Goals and market orientation of the BI

- Objective of BI;
- Types of clients by origin;
- Tenants and alumni;
- Activities of tenant companies

Operations Management and Financing

- BI Staff and management functions;
- Pricing policies of BIs;
- BI funding and operating costs;
- Internal performance criteria;
- Incubation processes;
- BI entrance and exit criteria;
- Client management.

Support Services and Networking

- BI business support services;
- Effective service delivery modes;
- Cooperation with other SME and innovation support institutions;
- Cooperation with corporates and industrial sector;
- Cooperation with universities/faculties and other educational institutions.

5.6.1 Basic Characteristics of the Business Incubators

Summary of Basic Characteristics of High Tech BIs

Considering the basic characteristics of High Tech BIs, we can note the following:

- Relatively young age of high-tech business incubators;
- Mixed pattern of ownership depending on core focus of the incubator;
- Predominantly located in cities;
- Most of the BI are in the size range 450-850 m^2;
- High tenant occupancy rates and waiting lists;
- Most common sectors of tenants are ICT and sales, marketing and distribution;
- Lack of structured business incubation programmes.

Age and history of the HT BIs

Most of the HT BI were established after 2010, except for the BI of Technical Faculties, Belgrade was the first BI from the HT list established in 2006, NIT Novi Pazar in 2009 (though then operational as a cluster), and BI Kruševac in 2010. As of 2013, the new "wave" of incubators emerged. For example, Nova Iskra and STP Čačak were established in 2013 and, even 3 new BI were established during 2014, namely, ICT Hub, In Centar and Impact Hub. These findings also correspond with the unpublished findings of the EU4TECH project - that most incuba-

tors in Serbia are relatively young compared to their counterparts in Western Europe[68].

All HT BIs reported that they are non-profit, but established as companies limited by guarantee. During the consultation process, it was reported that this legal status supports BI operations and functions, at the same time allowing them to apply for the public and project funding. An interesting case is NIT Novi Pazar, that is established and officially registered as cluster. Over time, it changed its focus following the needs in the market and society, and building on its' own competitive advantages, so the focus had been changed, from supporting SMEs and companies to supporting start-ups and young entrepreneurs within the University.

Founding partners of the HT BIs

The general overview of the founding partners is presented in Figure 6. Around 50% of BIs reported varied types of entities as one of their founders, including the Investment Promotion Fund in Vojvodina, Regional Development Agency, private company, Chamber of Commerce, NGOs and other legal persons. For example, this coalition of a number of different types of founders, namely the City of Kragujevac, Regional Chamber of Commerce Kragujevac, Regional Agency for Economic Development of Šumadija and Pomoravlje, Association of Private Entrepreneurs "Šumadija" and General Association of Entrepreneurs "Sloga", has supported the processes behind BIC Kragujevac's provision of valued services and benefits to its tenant companies and SME sector in general.

Having in mind that these are considered HT BI we had expected to observe a higher percentage of Universities as at least one of the founders. Almost 35% of BIs reported Universities as one of the founders (STP Belgrade, BI of Technical Faculties, STP Čačak, Start-up Center Niš, BI Novi Sad, NIT Novi Pazar and Start-up Center Belgrade). NIT and Start-up Center Belgrade provide unique example of BIs with university links, in that the BI Centres are an integrative part of the International Faculty of Novi Pazar and Economics Faculty in Belgrade respectively. We explain this relatively low university involvement through the variety of different business incubation models that have emerged in recent years supporting high-tech and innovation-based start-ups.

The BIs that are functioning as a co-working space mostly have a private company as one of their founders – Infostud Hub (Infostud company), MIND (Mind group), Think Innovative (Tehnicom group). All these companies are larger in size, for example the Infostud company is one of the major internet companies in Serbia, with 170 employees, Tehnicom Group has around 50 employees. These companies have taken a proactive social responsibility role to support economic development of Subotica and Niš region respectively.

Supporting processes of local economic development, almost 30% of HT BIs reported that one of the founders is Municipality and/or NGO. For example, In Centar is 100% established by NGOs. Business Incubator Kruševac is 100% owned by the City of Kruševac and there is a high alignment between

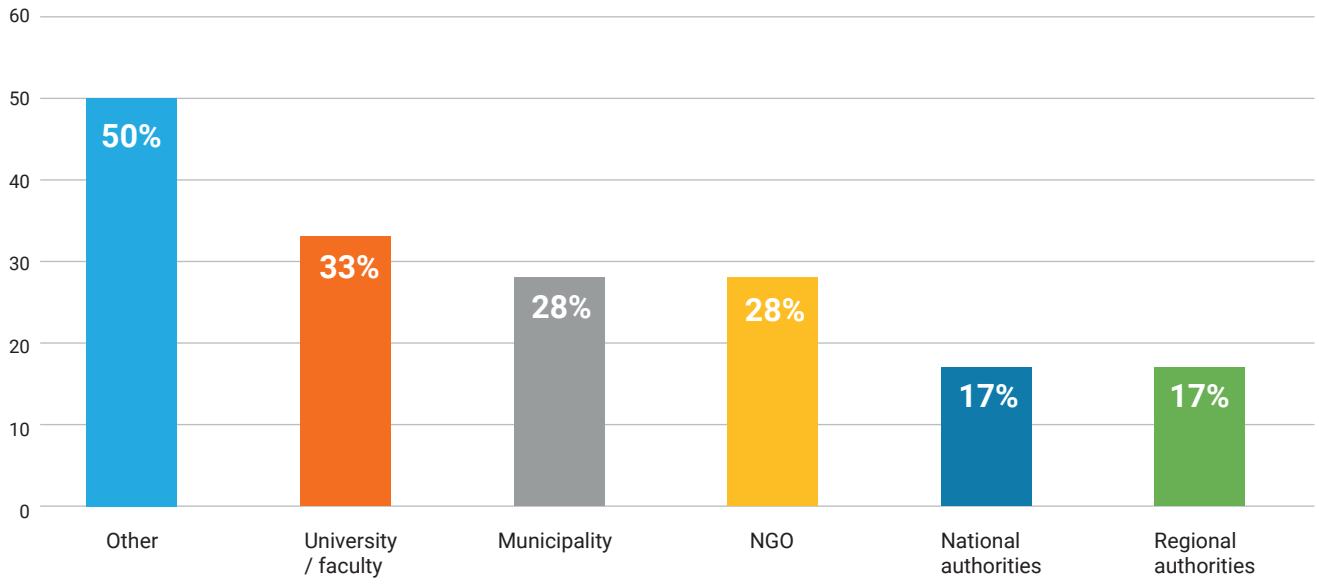


Figure 6. Founding partners of HE BIs

[68] Meeting with the EU4TECH project team representative (2019).

the BIs and the Municipality objectives "Whenever the investor comes to our regions, it is important for us to say that we have an incubator. It gives creditability to the innovation ecosystem of our city and the whole region".

Almost 20% of BIs reported National authorities and regional authorities as one of their founder. This is mainly the case for the BIs in Vojvodina where Autonomous Province of Vojvodina provides strategic support to the BIs development since 2003, but is also one of the shareholders in supported BIs and member of the tenants' selection committee. For example, Investment Promotion Fund in Vojvodina has 40% of the BI Novi Sad.

Location and premises of the BIs

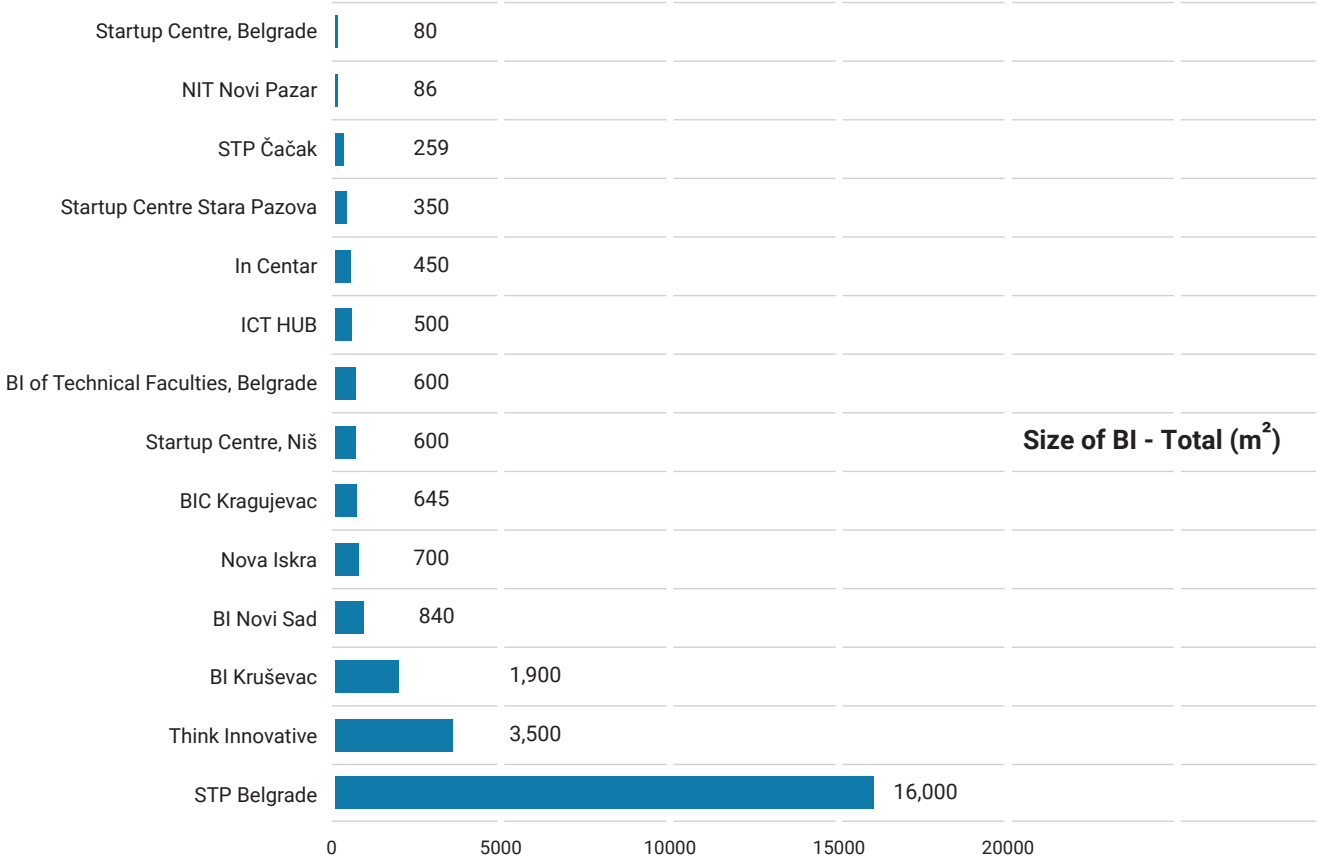
Whilst almost 80% of BI reported that their location is in the cities, fewer than might have been expected have close geographic proximity to the University campus. Only 17% are located on a campus, namely Start-up Centre Niš, NIT Novi Pazar and Start-up Centre, Belgrade. BI Kruševac report themselves as being a green-field investment. Having in mind the objectives of the HT BI, current locations of HT BIs raise questions about how effectively they will be able to link with Higher Education Institutions to provide effective academic-business linkages supporting innovation and commercialisation of R&D. Whilst this is beyond the scope of the study to answer, it is something that should be directly addressed to HT BIs through the upgrading and development of their service portfolios.

Basic office space is the most common physical offering, with almost 70% of BIs reporting that they provide co-working space, and 33% providing office space. For example, Impact Hub indicated that all their space is allocated to tenants. Other facilities such as event space, meeting rooms, skype rooms etc. are the second most common form of physical facilities, provided by 44% of HT BIs. A perhaps surprisingly low number (17%) reported that they have R&D lab facilities.

Size of the HT BIs

The size of BIs varies significantly from the smallest 80 m^2 (Start-up Center Belgrade) to the largest 16,000 m^2 (Science Technology Park Belgrade). The average (mean 1,894 m^2) size of HT BIs is distorted because of STP Belgrade's reported size of 16,000 m^2. Removing STP Belgrade from the sample, as an outlier, the average size of Serbian BI is much smaller in size – 808 m^2. Most of the BI fall into the size range of 450-850 m^2. Figure 7 presents the overview of the size of the HT BIs premises.

Figure 7. Size of HT BIs premises



BI occupancy rates are very high (reported at 100%) with some BIs reporting long waiting list of tenants, e.g. Nova Iskra and ICT Hub. This is driving some geographic expansion. For example, Nova Iskra (Savski Venac) opened two more offices in 2019 in Belgrade (Zemun and Dorcol). However, in some cases high occupancy rates, especially by analysing tenants' profile, also suggests that incubators are satisfied with existing and verified tenants for longer period of time rather than proactively searching for new deal flows.

Summary of Basic Characteristics of Self-Employment BIs

Considering the basic characteristics of Self-Employment BIs, we can note the following:

- Relatively mature age of self-employment business incubators;
- Core focus of the Municipality within the ownership structure, together with initial donor-support;
- Predominantly located in urban locations;
- Most of the BIs are small in size (though the figures are distorted my mixed use of incubator premises and facilities);
- Small number of tenants and clients;
- Low turnover of business incubator clients;
- Like HT BIs, the most common sectors of tenants are ICT and sales, marketing and distribution; and
- Lack of structured business incubation programmes.

Age and history of the SE BIs

Most of the SE BIs are limited liability companies, established as not-for profit. The average length of operation is 9 years, suggesting that most of them should be fully developed and mature. The youngest SE BI observed was established 2 years ago (i.e. Pomak), with the oldest ones having been established 13 years ago (BI Yumco and BI Zrenjanin).

Most of the BIs reported that they were established with donor-funded support. BIs in Vojvodina were established with the support of the Austrian government and Vojvodina Investment Fund in the period 2006-2007, whilst the BI in Bački Petrovac was supported by Slovak aid support. World Bank supported the establishment of BIs in Majdanpek, with USAID and SIDA supporting establishment of BI Pomak. The IPA programme supported the establishment of BIC Kladovo and BIC Užice in 2008 and 2009 respectively.

Founding partners of the SE BIs

The Municipality is one of the founding partners in more than half of the SE BIs. In BIC Užice, BIC Kladovo and ZIP Center Pirot the municipality is virtually the only founder with approximately 100%, compared with BI Senta – 65%, BI Yumco – 49% and BIC Bački Petrovac – 35%. NGOs are the second most common founding partner (in almost 50% of the BIs). For other partners BI reported a mix of different founders, for example: various other physical persons – BI Valjevo; the local development agency - BI Subotica; and companies - BI Yumco. As an example of a mixed founder approach, the Business Incubator Center Užice was established in 2008, with the aim of promoting newly established

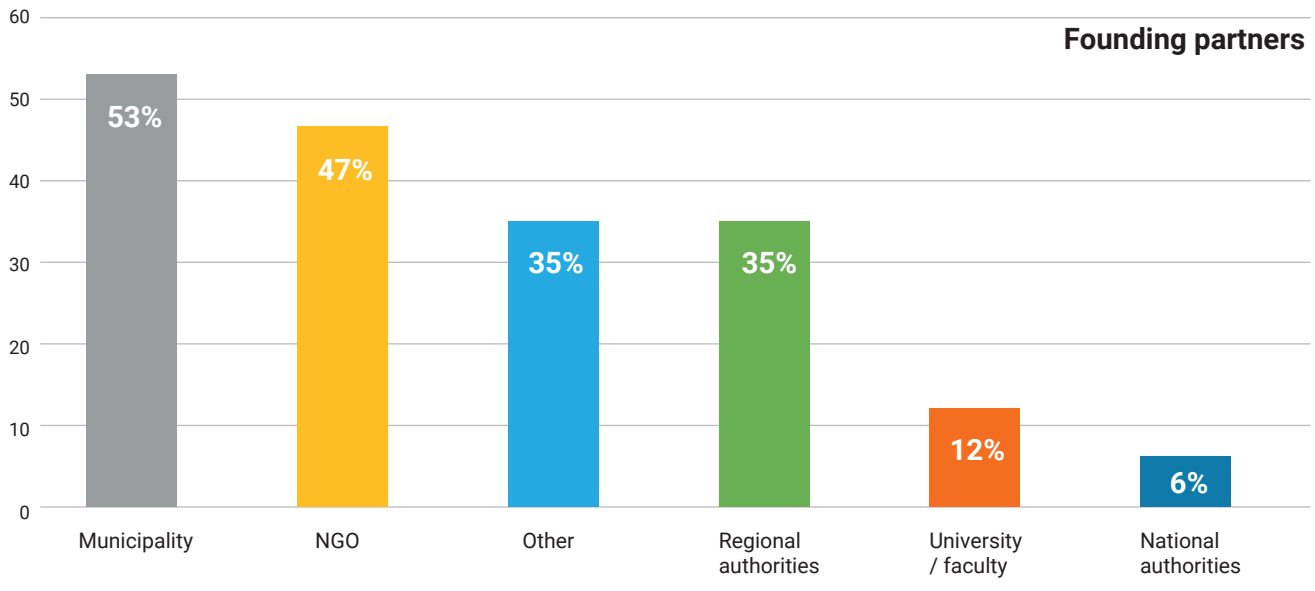


Figure 8. Founding partners of the SE BIs

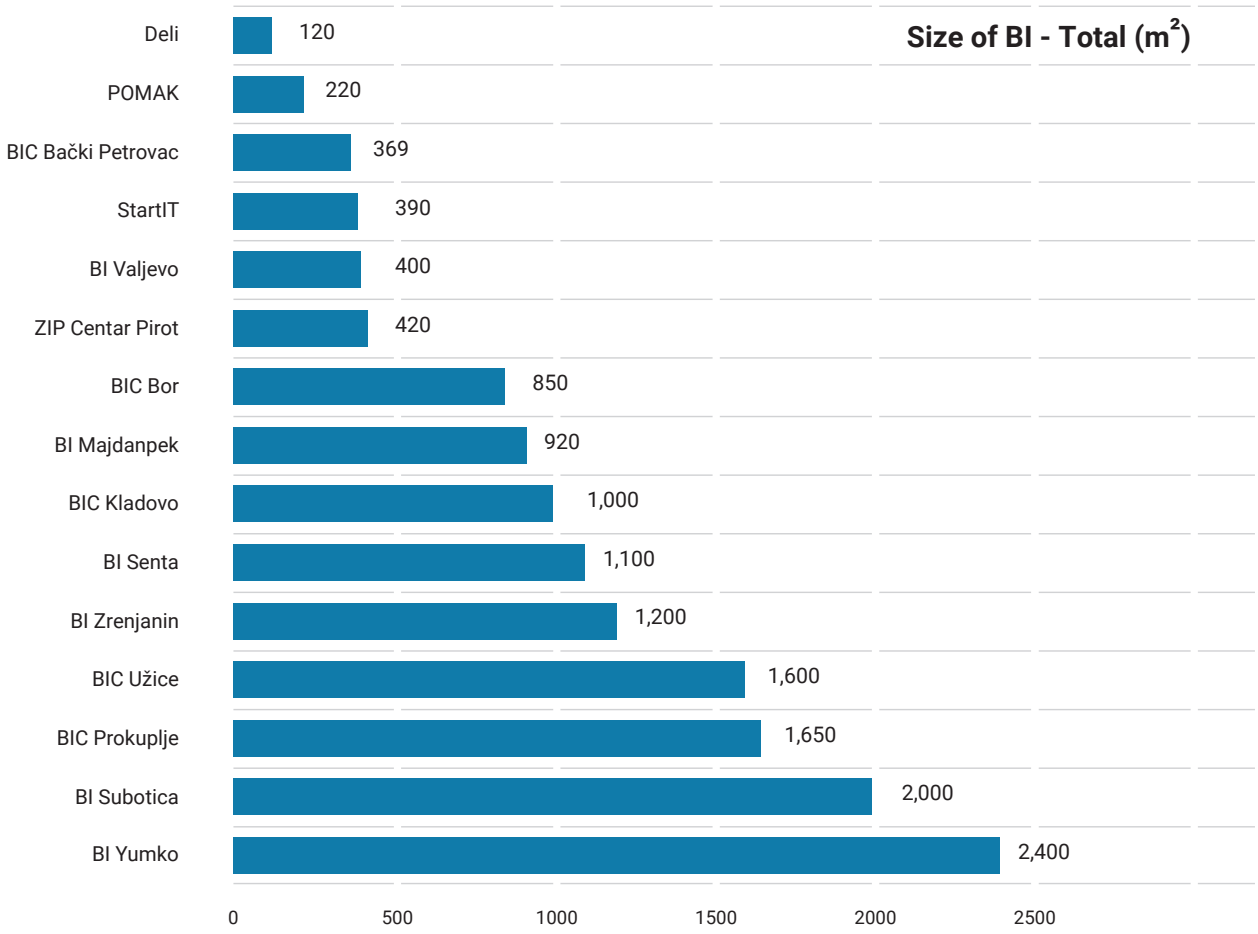


Figure 9. Size of SE BIs premises

companies, through the initiative of the Municipality of Užice, as the main the founder with a share of 95%, together with the Regional Development Agency Zlatibor with a share of 5%, alongside the support of the European Agency for Reconstruction.

Location and premises of the SE BIs

Around two thirds of the SE BIs have an urban location (65%), whilst some are located on outskirts of cities, for example BIC Bor, BI Majdanpek and BIC Kladovo. Only one, SE BI (Valjevo), reported their location as being at the commercial premises in city centre in a vicinity of University Faculty.

Size of the SE BIs

The size of BI premises varies considerably, from the smallest at 120 m^2 (Deli) up to 2,400 m^2 (Yumco). Overall, the SE BI in Serbia are generally small in size with the average size is 976 m^2. Within these calculations, we have not taken the Business Development Centre Kragujevac into consideration, since it doesn't offer premises to the tenants, whilst information on the size of Coffice premises is not available. It should also be noted that some of the biggest incubators are using larger part of the space of the incubator for production halls i.e. BIC Prokuplje with 1,650 m^2 and BIC Užice with 1,600 m^2.

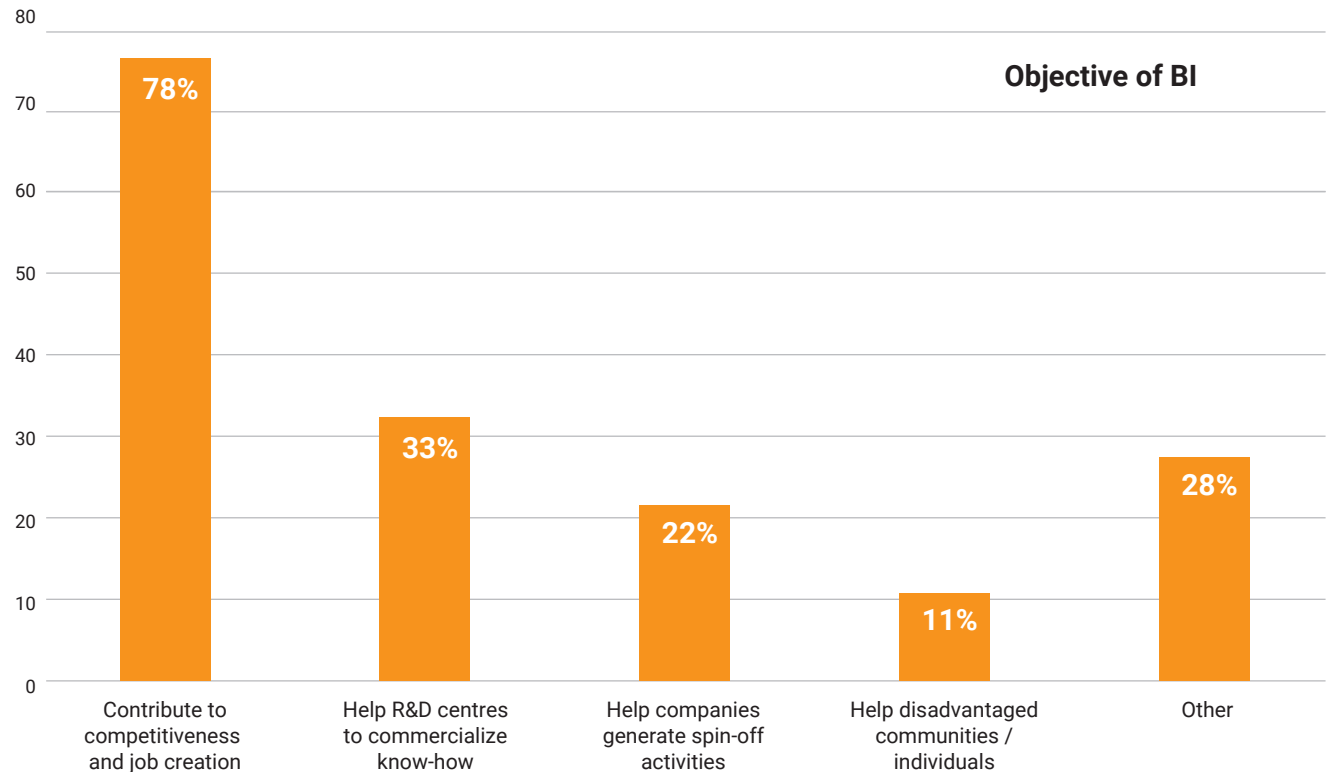


Figure 10. Objectives of HT BIs

5.6.2 Goals and market orientation

Summary of goals and market orientation of the HT BIs

Assessing core goals of High Tech BIs, we can note the following conclusions:

- Core objective of competitiveness and job creation;
- Relatively low prioritisation of R&D commercialisation and spin-offs;
- Majority of clients are freelancers and SMEs;
- Many BIs noted a difficulty in attracting start-ups;
- ICT and sales, marketing and distribution are the most common sectors of tenants;
- There are relatively low levels of advanced / high-tech manufacturing and R&D tenants.

Objectives of HT BIs

Almost 80% of the BIs reported that their objective is to contribute to competitiveness and job creation (Figure 10). For example, STP Čačak has been established to enable "collaboration between industry, science and research through the development of new ideas in order to increase the competitiveness of the regional economy".

The objective to help companies generate spin-off activities was reported in only 22% of cases. More than 30% of HT BIs defined the objective of helping R&D centres to commercialize know-how. BIs also reported other type of reported objectives such as support to networking, promotion, support start-up and young entrepreneur's investment readiness (28%), for example:

- The aim of the Business Incubator Novi Sad is to help young companies find their way to market. The BI's focus is on supporting projects based on knowledge and new technologies that have growth potential in the market and have potential for scalability.
- The objective of the Start-up Center Belgrade is to be a place "where students, with the support of a professor at the Faculty of Economics and some experienced mentors from the businesses, can develop their entrepreneurial ideas and make the first steps in business".

Tenant profile in HT BIs

More than 70% of the HT BI reported that their clients are freelancers and start-ups/SMEs (Figure 11). However, during the peer review workshops it was noted by many BI managers that

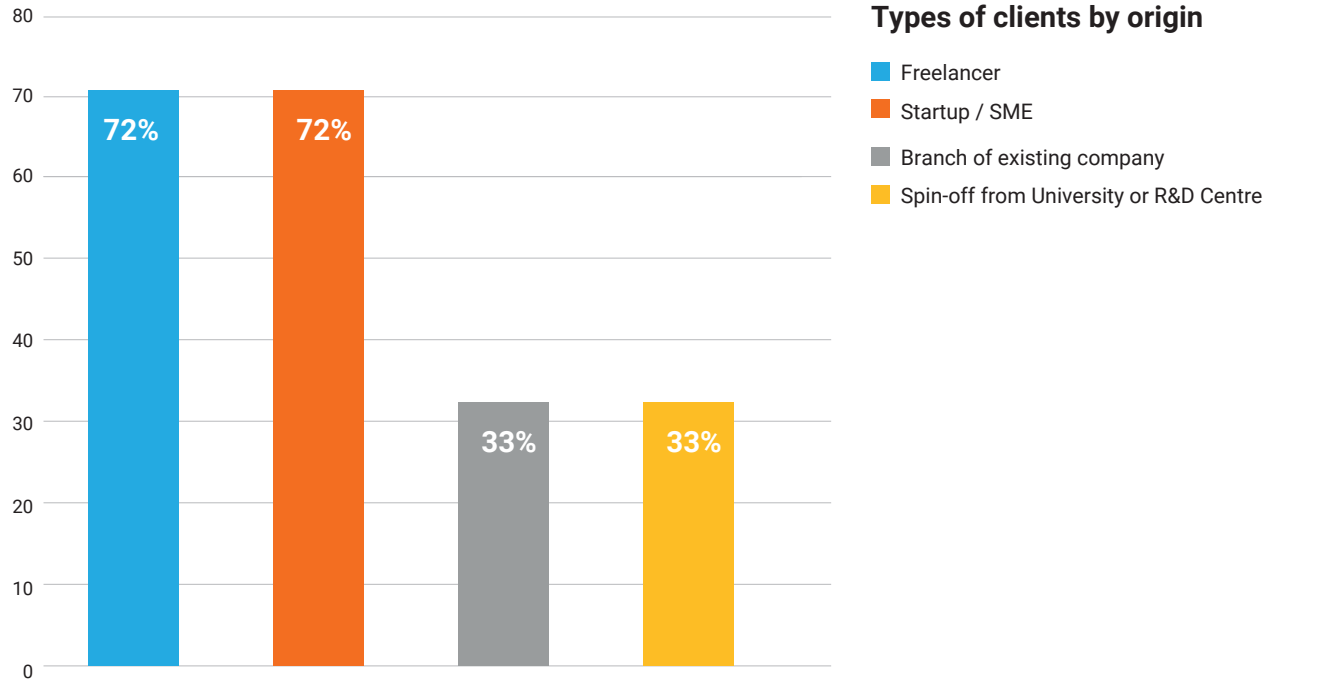


Figure 11. Type of clients in HT BIs by origin

it is sometimes difficult to find start-ups, and that these type of clients always have a priority for the placement. Spin-offs from the University or R&D centre as clients represent only 33% of cases, which is generally low for a HT BI. However, this does correspond with the finding that only 22% of BI stated that one of their objective is to support spin-off from the University.

Tenants and alumni

There is widespread variation in the number of in-house supported businesses amongst the BIs. ICT Hub reports the highest number (110), with the lowest reported in Start-up Center Belgrade (4). The average number of tenants is 28, with most of the BIs reporting that they host between 24 and 36 tenants. The average number of supported businesses for HT BIs (since beginning operations) is 81 tenants.

BI managers reported high success rates of graduated companies of between 85-100%. This corresponds with similar findings of the EU4TECH project who also report that only StartIT and ICT Hub have survival rates lower than 50%, while the other HT BIs reported higher success rate of their tenants[69].

Of some concern in terms of measuring long term business incubator impact, is that most of the BIs report that they do not follow the companies after graduation. Most of them do not have an alumni database[70].

Activities of Tenant Companies in HT BIs

Reported activities of tenant companies, shows strong sectoral bias, with high clustering in the following sectors: ICT (83%), sales, marketing and distribution (72%), business and financial services (50%) as presented in Figure 12. Advanced / high-tech manufacturing and research and development are reported to be on a low level, around 30% and 10% only. These findings also correspond to EU4TECH project findings that within the main economic activities of the tenant companies, ICT dominates, followed by sales, marketing and distribution. These figures do reveal a lack of diversity in the start-up community and a lack of alignment with emerging S3 priorities.

We would note that the tenant activities in the HT BIs demonstrate a very similar pattern to activities of the ten-

[69] EU4TECH (2019).

[70] EUBID,Peer review workshops (June-July 2019).

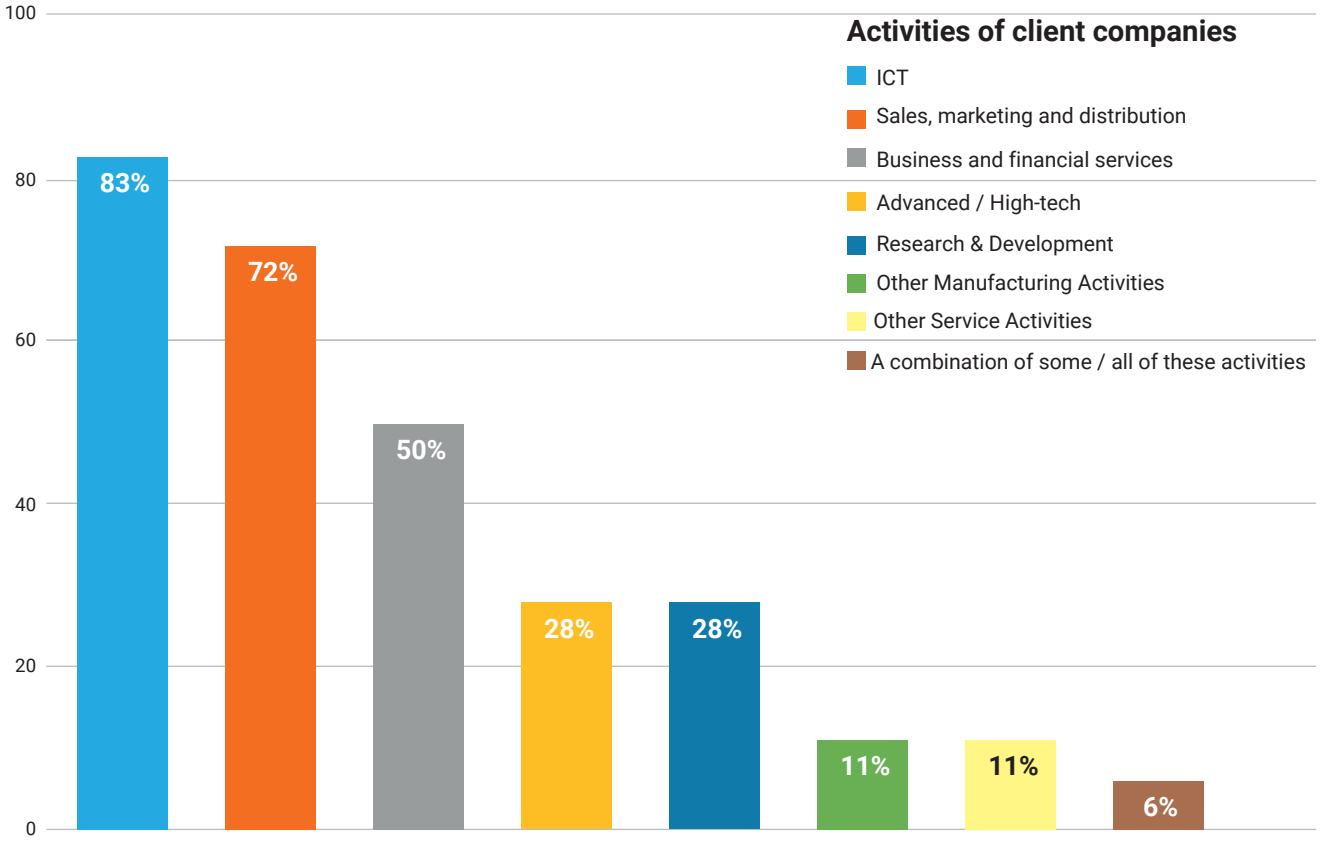


Figure 12. Activities of HT BI client companies

ants from the SE BIs. This highlights often limited differences between the high tech and self-employment BIs.

Summary of goals and market orientation of the SE BIs

Assessing core goals of Self-Employment BIs, we can note the following conclusions:

- Core objective of most SE BIs is on competitiveness and job creation;
- Some SE BIs have explicit objectives relating to supporting disadvantaged communities/ individuals and women;
- Start-ups and SMEs are the most common tenants;
- Similarly, with the HT BIs, ICT and sales, marketing and distribution are the most common sectors of tenants for SE BIs;
- The reported success rate of supported businesses is very high, though this is based on limited data.

Objectives of SE BIs

Contributing towards competitiveness and job creation is the most commonly reported objective of BIs (more than 80%, Figure 13). Other social inclusion objectives, such as supporting disadvantaged communities/ individuals (e.g. BIC Bački Petrovac), and women's entrepreneurship development (e.g. BIC Bački Petrovac) are also mentioned. Indeed, Bački Petrovac is notable through a strategic orientation to business and family development including support to female entrepreneurship. The BIC is recognized by the local female community through having had a strong and lasting collaboration with the Academy of Female Entrepreneurship, which was one of the founders, alongside the Municipality of Bački Petrovac, and the Development Agency Vojvodina.

Tenant profile in SE BIs

More than 70% SE BIs reported Start-up/ SMEs as clients. Established branches of existing companies as clients are mentioned by 60% of SE BIs, and free lancers in 50% of cases. The main tenant profile is presented in Figure 14.

Tenants and alumni

Total number of supported businesses by SE BIs is 228, though only six out of 16 BI answered this question. The number differs widely from 10 to 59, and in average each Serbian SE business incubator initiative in Serbia supported 38 tenants since they commenced functioning. Therefore, we could assume that 17 SE BIs, in total supported 646 businesses. Number of currently in-house supported businesses also ranges from 2 hosted by Bački Petrovac, 4 by BI Majdanpek, BI Senta and BIC Kladovo (each) to 10 in BIC Bor. In total, SE BIs support 153

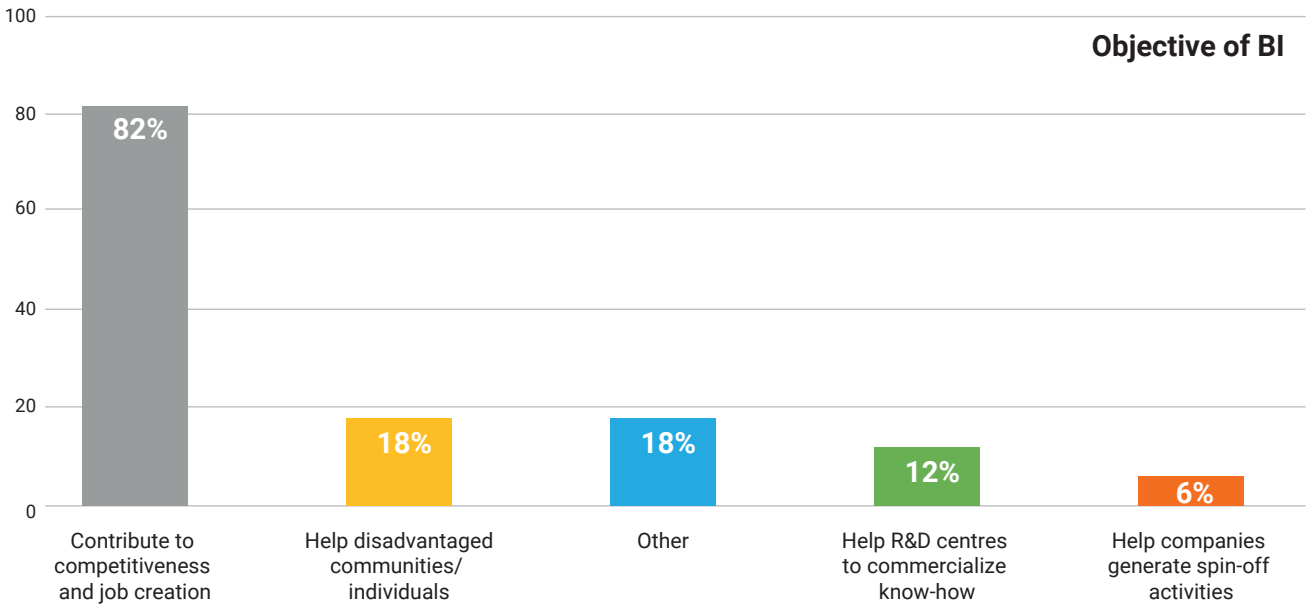


Figure 13. Objectives of SE BIs

businesses and on average 13 tenants are supported by SE BIs.

The success rate of supported businesses is reported to be very high: the highest is in BIC Užice – 96%, followed by Zrenjanin – 75% and Bački Petrovac – 66%. Other incubators didn't respond to this question. Data on the number of created jobs is incomplete as this indicator was clarified during face-to-face discussions or reporting documents of BIs. Again, BIC Užice reports a high number, in total 137, and BI in Senta and Zrenjanin reports 50 created jobs.

Activities of Tenant Companies in SE BIs

The main reported activities of tenant companies are in the following sectors: ICT (70%), followed by sales, marketing and distribution (60%) as presented in the Figure 15. Interestingly, these are the same findings as for the clients of HT BIs. Other reported activities are more varied, including manufacturing activities (50%) such as wood (processing) industry, locks, metal processing and other service activities (30%) such as legal services, accounting, legal and architects.

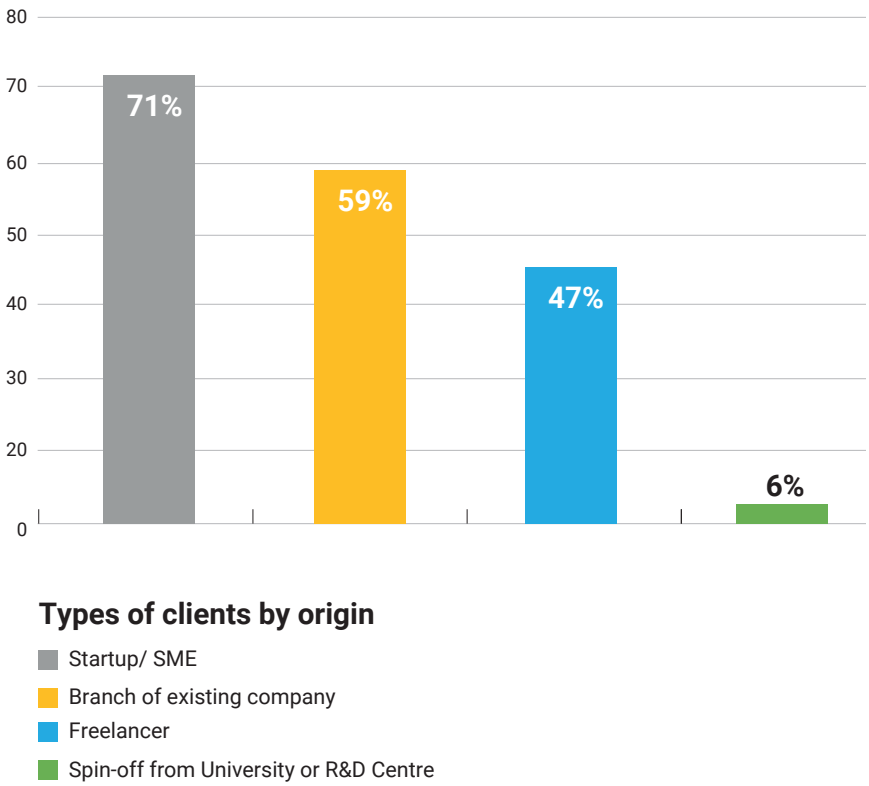


Figure 14. Type of clients in SE BIs by origin

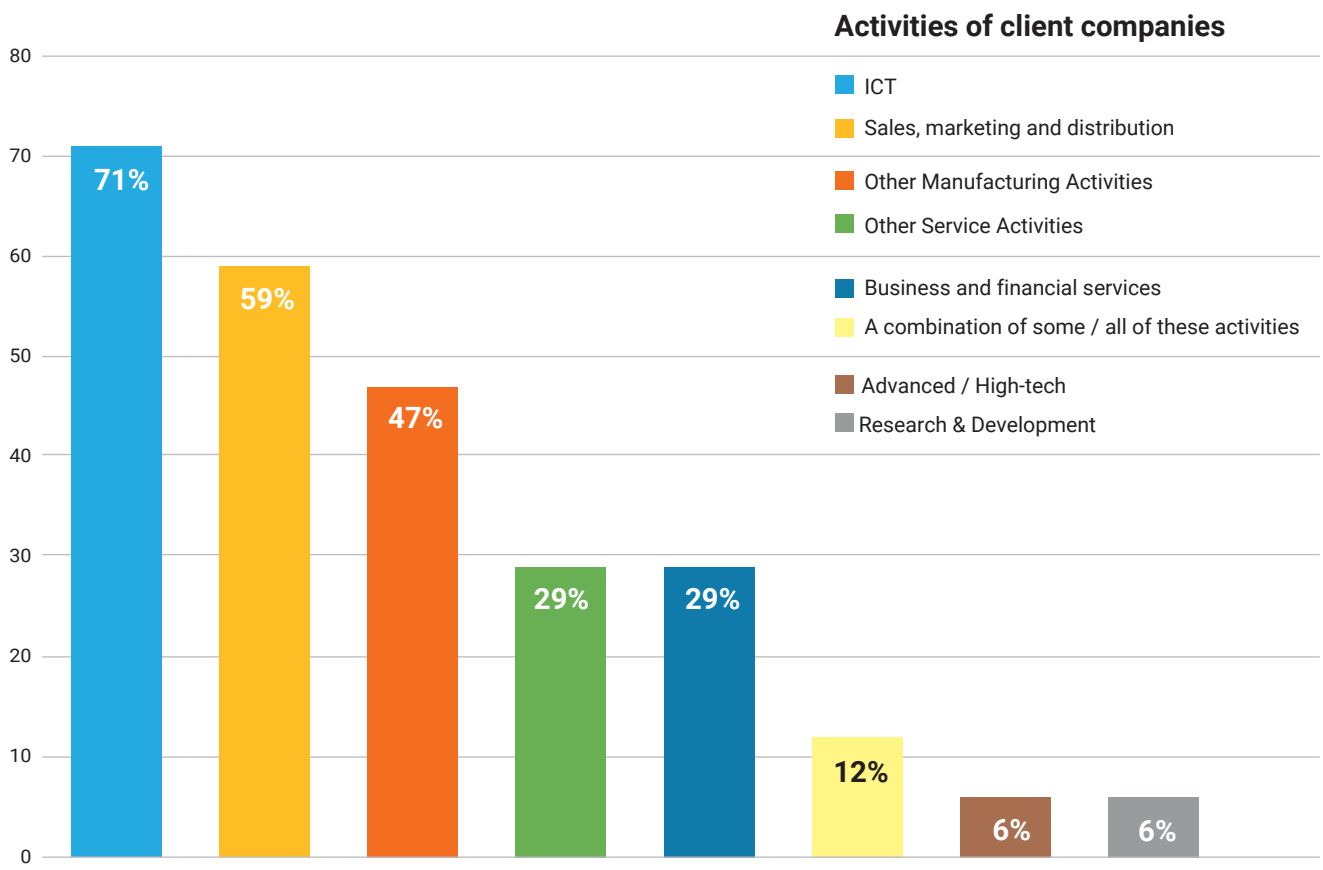


Figure 15. Activities of client companies

Some SE BIs have clear sector or target group focus, for example, Pomak from Zaječar defines the following target groups: IT professionals, freelancers in need of co-working space working in the domain of marketing and communication. In BI Zrenjanin there is a noticeable of female tenants which creates a positive working atmosphere and good gender balance, considering that the technical sector, toward which the BI Zrenjanin is oriented, is predominantly male- represented.

5.6.3 Operations Management and Financing

Summary of Operations Management and Financing for HT BIs

Analysing operational management issues and financing of High Tech BIs, leads us to conclude the following:

- HT BIs typically have small number of staff, constraining ability to expand service delivery;
- Most functions of BI management teams are fairly basic routine management and advice and assistance to tenants;
- More than half of BI management staff have previous experience of advising start up and small firms, and come from the private sector;
- Premises rental costs for tenants are lower than typical market prices in 70% of BIs, with some providing them free of charge;
- Less than one in five BIs perform commercial activities to support revenue streams;
- Most of the BIs receive cash operating subsidies, and depend on external subsidy for survival;
- The main internal performance criteria used by HT BIs are BI occupancy rates and number of jobs created by tenant/graduated companies;
- BI managers report high success rate of the graduated companies 85-100%, but there is little post-graduation tracking of previous tenants;
- Around 40% of potential applicants are approved as tenants.

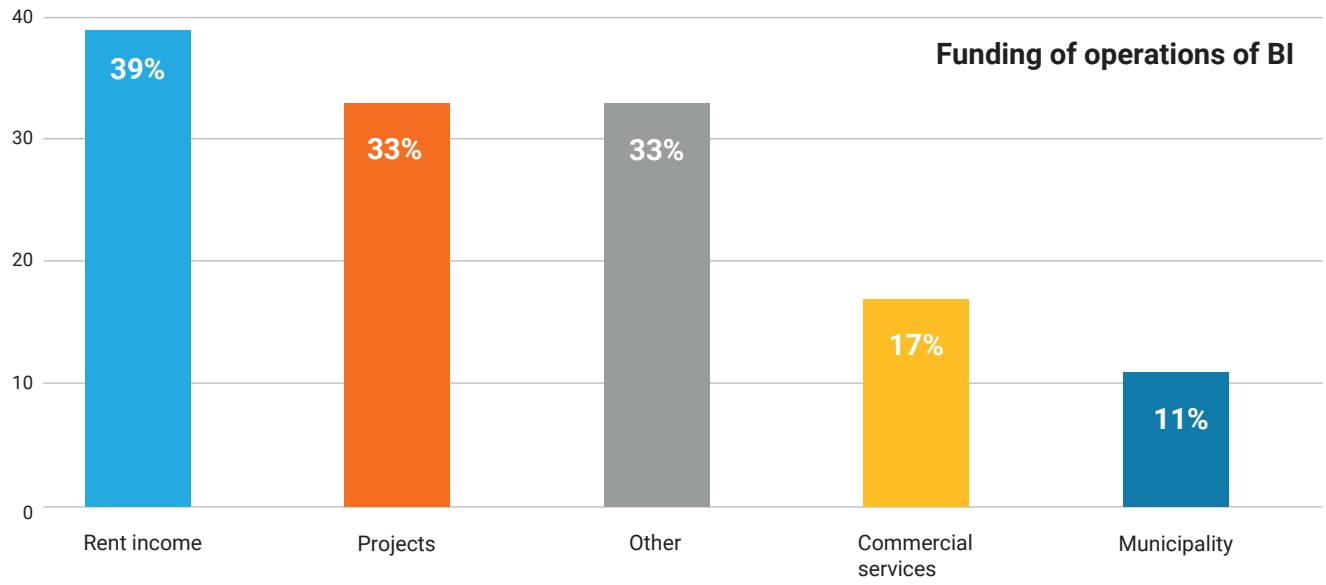


Figure 16. Funding of operations of HT BI

- A business plan together with a sound management team are the two most common entry criteria for selecting tenants;
- Exits are most commonly on the basis of fixed term access to the BI;
- There is limited systematic performance monitoring with tenants and clients.

Number of HT BI personnel

Most of the HT BIs have one manager, with an exception of Nova Iskra with 3 Managers, and Impact Hub, BI of Technical Faculties and Innovation Start-up Centre Stara Pazova that have two Managers. There is typically one secretarial person, with the exception of Impact Hub who reported two. Most of the HT BIs reported a greater number of "other" staff (on average 6.8 persons). This varies significantly, from one person to 35 persons reported in Think Innovative.

Main functions of HT BI management and staff

The functions of HT BI management and staff are generally rather limited, and in most of the cases involve routine management of incubator affairs and providing some advice and assistance to tenant companies.

HT BI staff profile

A positive finding is that almost 70% of HT BI staff come from the private sector and have set up/managed their own firms or worked in business themselves. Half of them have previous experience of advising start up and small firms. The qualifications of HT BI Managers tend to be in the following fields: personnel management (60%), followed by Sales, trade, marketing (30%), Accounting, banking, finance (28%), ICT, IPR (22%).

The general impression after the Peer review sessions (conducted for 10 HT BIs) was that almost all BI Managers have a good understanding of BI development and operations and a clear vision what role the BI should take in the society. The energy and the creativity of the BI managers was in all cases inspiring.

Pricing policy of HT BIs

More than 70% of the HT BIs responded that rents are below market rates for a facility of this type. Rent of the space and usage of the equipment is provided free of charge in the BI that supports student entrepreneurship in NIT BI in Novi Pazar and Start-up Center at the University of Belgrade.

Funding and costs of HT BIs

Almost 40% of the HT BI managers reported that primary funding of their BI operations comes from rental incomes, projects and other related activities. Only 17% reported that they perform commercial activities. The best-case examples of commercial focus are ICT Hub and Nova Iskra, who reported that the majority of their funding is secured through the commercial activities. In contrast, BI Kruševac reported that 80% of their operations are financed by the Municipality of Kruševac.

Most of the HT BIs receive cash operating subsidies and if this funding was stopped, the effect on its operations would be that the incubator activities would have to be reduced significantly, or that incubator activities would stop altogether. BI operating costs mainly relates to the payroll and other related costs related to the services of compa-

nies. There are only a limited number of other BIs who do not receive any subsidies. This leads to the conclusion that most of the HT BIs are dependent on external subsidies and that they are still far away from developing sustainable models of operations.

Internal performance criteria for HT BIs

For the internal performance criteria, HT BIs usually use BI occupancy rates and number of jobs created by tenant/graduated companies. The same criteria are applied in most of the SE BIs, which again supports a key finding that in terms of basic operations and tenants, there are currently few major differences among these two types of BIs in Serbia.

Incubation processes of HT BIs

Around 40% of initial enquiries are approved to become incubator clients. The number of enquiries the BI receives per year is on average 72, ranging from 300 enquiries (ICT Hub) to 11 (STP Belgrade).

Entrance and exit criteria of HT BIs

Entrance criteria in HT BIs show that more than half of BIs are insisting on prepared business plans, in common with the SE BIs (see below for the comparable SE BI analysis). The second most used criterion is having a sound management team. Only 11% of BIs reported that a business must have an innovative project. As an initial screening for entry, however, there is a lot of sense in a core approach that combines used of a business plan to screen the venture idea, together with assessment of the clear match with a management team that can demonstrate ability to deliver the project.

Whilst there are a range of causes of exits from the HT BIs, a fixed term period is not surprisingly the most commonly used BI exit criteria. The other criteria are used less than half as often as the fixed term access.

Client management within HT BIs

Almost 60% of the HT BIs reported that they are monitoring performance of their clients. However, during the consultation process the findings showed that there is typically no specific monitoring system developed by the BI management, but that this is usually done through the occasional satisfaction survey, or following 1-2 indicators of their clients (such as number of employees). The exceptions are BIs in Vojvodina that are using the methodology developed by the Austrian funded project Tech2B from Linz in Austria for evaluation of

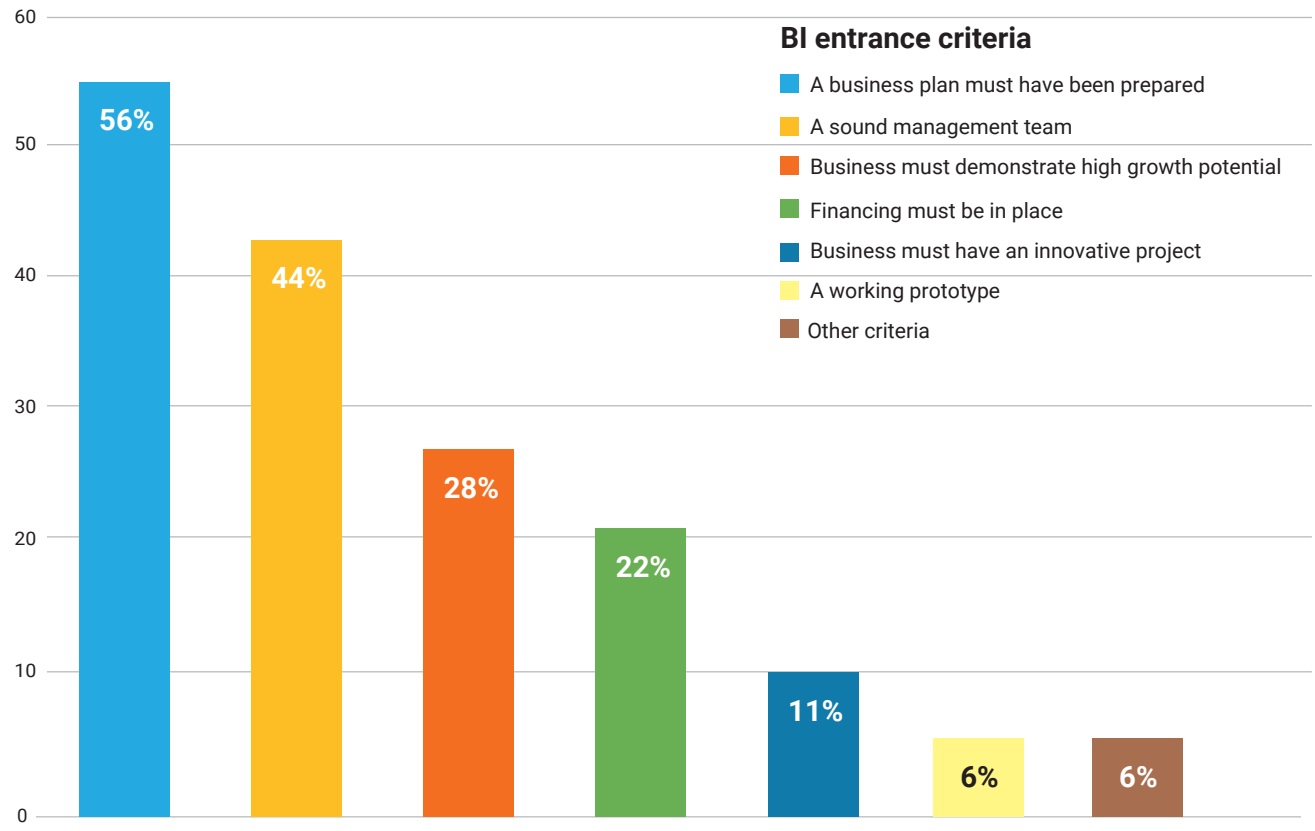


Figure 17. Entrance criteria in HT BIs

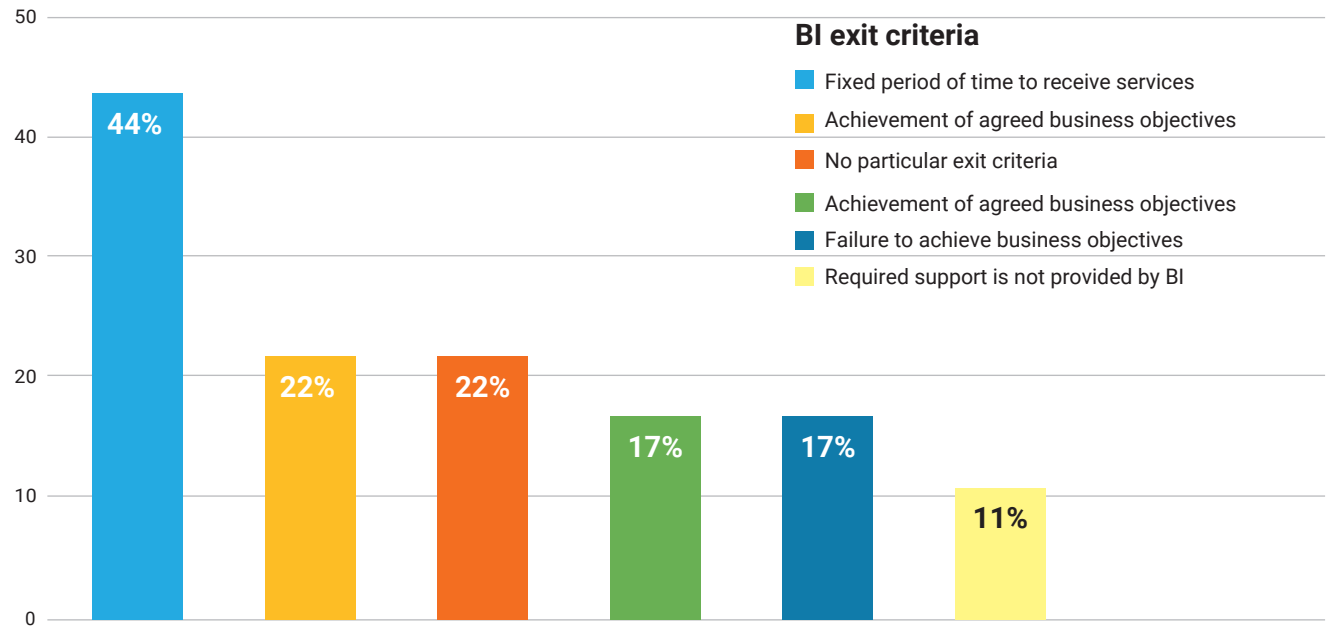


Figure 18. Exit criteria in HT BIs

tenants and screening board to evaluate and follow the work of tenants.

Summary of Operations Management and Financing for SE BIs

Analysing operational management issues and financing of Self-Employment BIs, leads us to conclude the following:

- Just like HT BIs there are typically small numbers of staff within SE BIs, limiting what services can be provided, and staff carry out routine management functions alongside provision of advice and assistance to tenants;
- Despite the founder profiles, only 25% of SE BIs reported that their staff had previously worked for public authorities/ agencies or universities, and in common with HT BIs, more than half of BI management staff have previous experience of advising start up and small firms, and/or worked in business;
- Premises rental costs for tenants are typically subsidised, often on a sliding scale of subsidy, with some providing them initially free of charge;
- External subsidy is seen by many SE BIs as important for long term survival;
- BI occupancy rates and number of jobs created by tenant/graduated companies are the main internal performance criteria used by SE BIs (in common with HT BIs);
- BI managers reported high success rate of the graduated companies 85-100%, but there is little post-graduation tracking of previous tenants;
- A higher proportion (70%) of potential applicants are approved as tenants in SE BIs, compared with 40% in HT BIs;
- There are more limited entry requirements in SE BIs compared with HT BIs, with a business plan being the single most common entry criterion for selecting tenants;
- Whilst fixed term exit/graduation policies are used, there is sometimes some flexibility in how these are applied;
- Regular monitoring of tenants and clients is reported by 65% of SE BIs.

Number of SE BI personnel

Most of the SEs BI reported that they have just one Manager. BI Pomak has 4 managers, and BI Yumco doesn't have any manager at the moment. Regarding administrative staff, most of the SE BIs reported one person or none. Only StartIT reported more, with 2 administrative staff.

Other personnel within the SE BIs are usually associates and experts, engaged on projects or on an ad hoc basis. On average, SE BIs engage 1.5 external consultants, with most reporting 1-2. StartIT reported the highest number, with 8 consultants. The average overall number of personnel of the SE BIs (including manager, administrative and other personnel) is 3.5 persons.

Main functions of SE BI management and staff

The main functions of the SE BI staff include: BI management functions (76%); providing advice and assistance to tenant companies (65%); and networking with other BIs and business support organizations (47%).

SE BI staff profile

In total 65% of SE BIs reported that their Staff have set up and/or managed their own firms or worked in business, and only 25 % had previously worked for public authorities/ agencies or universities.

The main qualifications of SE BI Managers include accounting, banking, finance, personnel management, education and training. For example, DBC Kragujevac has 4 employees, including 1 psychologist and 3 economists; BI Valjevo has 2 employees, one from the IT sector and one with a marketing background.

Pricing policy

More than 70% of SE BIs stated that their rent is below market rates for a facility of this type. In almost 25% of cases, the rent is provided for free in the first year, and is steadily increasing in various scales. For example, BIC Kladovo provides the following conditions: first year free of charge, second year subsidises by 50%, in the third year 75% of full cost is charged, and in the fourth year it is charged at full commercial price. Similarly, in BI Subotica the rent is free in the first year. Various pricing models exist with varying proportions of commercial rent payable each year. For example, making comparison with BIC Kladovo, BI Senta does charge in the first year, at 30%, rising to 60% second year, and 90% in the third year. None of the BIs reported that the Rent is at or above market rates for a facility of this type. No SE BIs offered an option of rent in exchange for equity in the company.

There is no standardised approach, and different SE BIs make varied offers to new tenants, sometimes for short contract lengths. For example, BI Valjevo has 3-month contracts with the clients of co-working space including free use of a desk, IT equipment and the consulting services.

Funding and costs of SE BIs

More than 75% of SE BIs report that their operations are funded by projects. Rent from tenants is the second most important funding source (65%), followed by subsidies from the municipalities. In Vojvodina, SE BIs are also partially supported by the funding of the regional government. All BI are supported by at least two different sources, but most of them typically have three or four different sources of funding. For example, DBC Kragujevac is fully project funded, for 10 years from establishment they had around 30 projects supported by 26 donors: European Union, Embassy of the Kingdom of Norway, Ministry of Youth and Sport of RS, Solidar Suisse, SIPRU, OSCE etc.

More than 80% of SE BIs reported that the main BI operating cost is payroll. Other significant costs related to provision of services of companies,

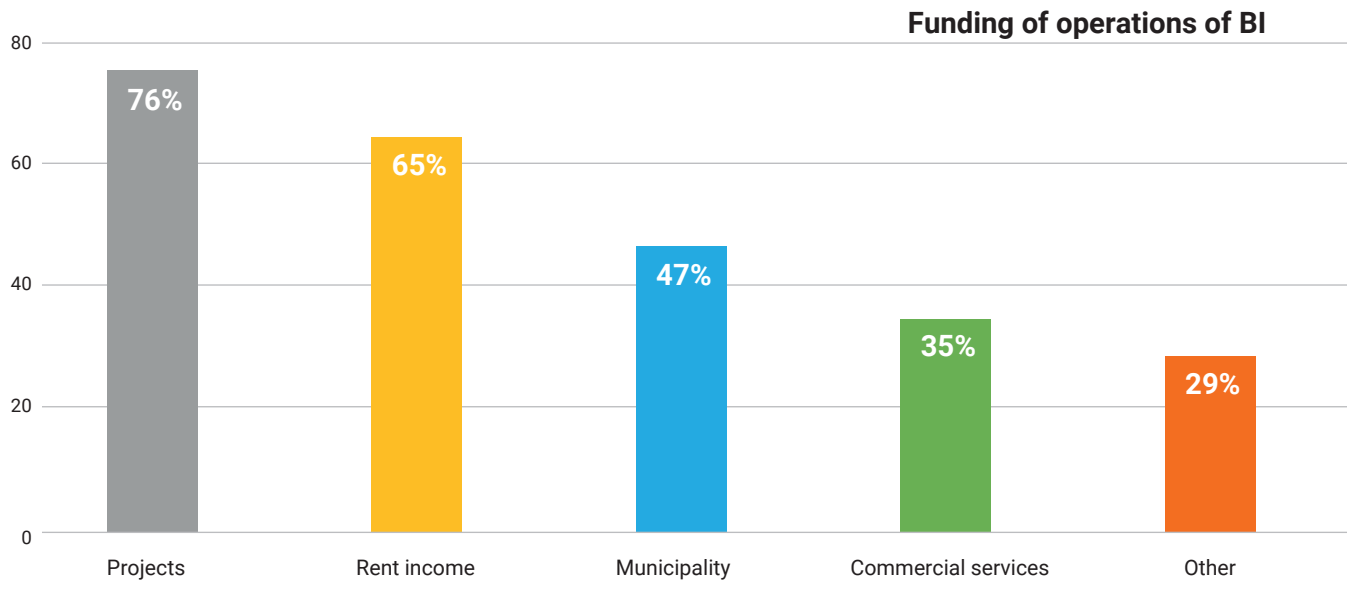


Figure 19. Funding of operations of SE BIs

equipment and supplies, as well as costs related to maintaining buildings and premises.

If cash operating subsidies were to be stopped, 60% of SE BIs responded that their activities would have to be reduced significantly. Income of SE BIs is on average very low, at around EUR 24,000 per year. There is wide variation in income, however, amongst the group of SE BIs. A few BIs reported annual incomes between EUR 13,600 and 17,000. Whilst other SE BIs had incomes reported between EU 65,000 and 88,000 per year.

Internal performance criteria for SE BIs

In common with HT BIs, SE BIs usually use BI occupancy rates and number of jobs created by tenant/graduated companies for the internal performance criteria.

Incubation process of SE BIs

More than 70% of initial enquiries become tenants of the SE BIs. The average annual number of enquiries is approximately 7 with 5 approved as tenants.

Entrance and exit criteria of SE BIs

More than 60% of the SE BIs reported that the major entrance criteria are that a business plan must be prepared. This was by far the most common entrance criterion, with relatively few other methods used. Two BIs reported that financing must be in place, which was the next most common selection method. Other criteria appeared not to be relevant for the SE BIs while evaluating potential tenants. It was surprising to find little attention paid to the quality of the team proposing a project, with most focus simply on the quality of the business plan.

As an example of approach, Business Incubator Zrenjanin developed a system for tenant entrance. For many years, the tenants have been accepted on the basis of a public competition. This is based on clear criteria where entrepreneurs with a sustainable vision and business model for their business can become residents of the incubator.

Regarding the exit criteria, there is often a degree of flexibility despite policies on fixed term tenancy. Almost 50% of BIs responded fixed period of time to receive services as one of the exit criteria (presented in Figure 20). This period varies between 3 and 5 years and the average length of time for these tenants is 3 years and 9 months.

For some SE BIs there may be opportunity to stay longer than the indicative fixed incubation period. In BIC Užice, for example, a period of incubation of 4 years is defined. However, the tenants can stay longer if they agree to pay a near to commercial rental price. This is important for tenants who have installed equipment in leased production halls and for whom moving to a new business premises outside BIC would disrupt a business process and cause additional costs.

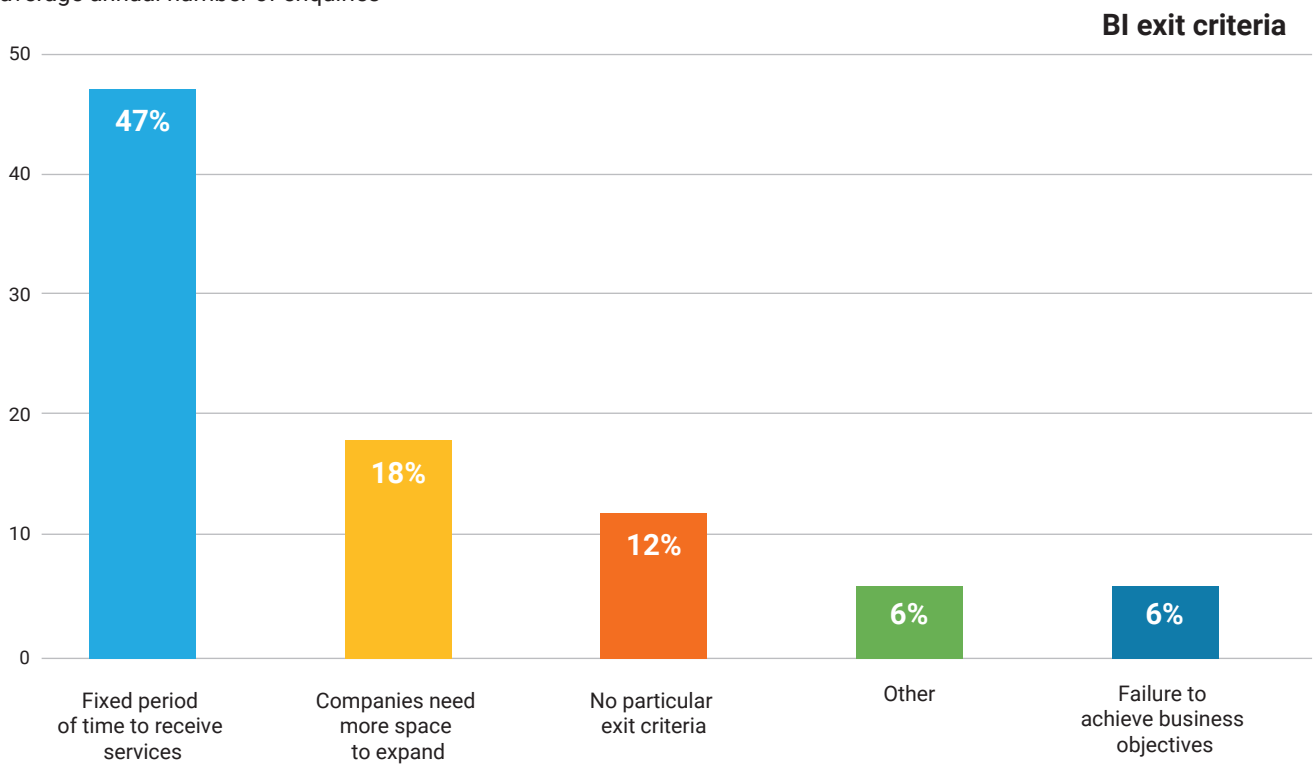


Figure 20. Exit criteria in SE BIs

Client management

In total, 65% of BIs reported that their clients are monitored on a regular basis, whilst only two SE BIs reported that they do not have a particular client management arrangement.

5.6.4 Support Services and Networking

Upgrading of the package of value-added services offered by business incubators is an important aim of the EUBID project, and identifying the areas in which this needs to be developed is an important component of this study. In this section, we identify the provision of the service package from the perspective of the BIs, which we will compare in chapter 6.3 with the views of BI tenants, to derive an assessment of the most important gaps in service provision.

Summary of Support Services and Networking for HT BIs

There are some interesting findings related to the packages of services delivered through HT BIs, together with the nature of cooperation with other ecosystem actors, leading us to conclude the following:

- Whilst the top five services delivered by HT BIs cover core issues, there appears to be a significant gap in provision of specialist innovation and export support;
- Mentoring and coaching are seen as the most effective forms of support, yet there is notable under-provision currently. This is a significant weakness to address;
- ICT and digital marketing services are provided, but there is a noteworthy mismatch between supply and demand;
- Cooperation between business incubators can be generally assessed as fairly weak, and in need of significant strengthening to build an effective ecosystem;
- There are some good examples of industry / incubator cooperation, but these can be usefully built on, and lessons transferred for adaptation by other BIs;
- The extent of cooperation between universities and BIs was less than expected, and reasons for this should be explored further, to identify better modes of cooperation between academia and BIs in support of innovation.

Services provided by the HT BIs

The top five ranked services overall that are provided by HT BIs are: 1) Networking, e.g. with other entrepreneurs, customers; 2) Training to develop business skills; 3) Accounting, legal and other related services; 4) Pre-incubation services; and 5) Business planning and forming a company. These are delivered through a mixture of in-house and external provision as shown in Figure 21.

Addition commonly provided in-house services amongst HT BIs include links to higher education institutions (HEIs), project management advice and assistance, and advice on recruitment of staff and personnel management.

Given the anticipated focus on services related to innovation and export, it is surprising to find that less than a third of HT BIs are providing important market access services of market research, and export support, as well as relatively low provision of assistance with access to finance in-house. Some support to both export and product development is developed through implemented projects, however.

The most commonly reported services that are provided via external source are advice and assistance on new product development and help with raising bank, finance, grants and venture capital. Through projects, HT BIs usually provides accounting and legal services as well as secondments of mentors, board members and other senior advisors. Given the importance of mentoring, we would particularly note the surprisingly low proportion of HT BIs providing support with mentors, board members and other senior advisors.

Help with ICT and e-business is reported as a frequently provided service, especially via external sources. This does not correspond with our findings in demand side analysis, however, where tenant companies identify this as the service they would most like to receive (but do not currently receive).

There is a similar service provision gap identified for accessing mentors, board members and other senior advisors. We comment further on the mismatches between services provided and desired in the next chapter.

Effectiveness of Business Service Delivery Methods for HT BIs

Interestingly, for HT BIs e-learning and online learning is identified as single the most highly effective capacity development method. Overall, when combining highly and very effective methods, the most important is networking amongst experts, followed by workshops, then individual coaching and mentoring. We were slightly surprised that coaching and mentoring was not viewed as the most effective method alongside expert networking.

Case studies are also seen as important and effective, and are more highly effective than workshops on their own. Blended training course and formal courses are viewed as effective in around the same number of cases, however, blended programmes have marginally greater effectiveness. Assessments, tests, and quizzes are not ranked so highly, perhaps reflecting that they measure capacity development more than developing it.

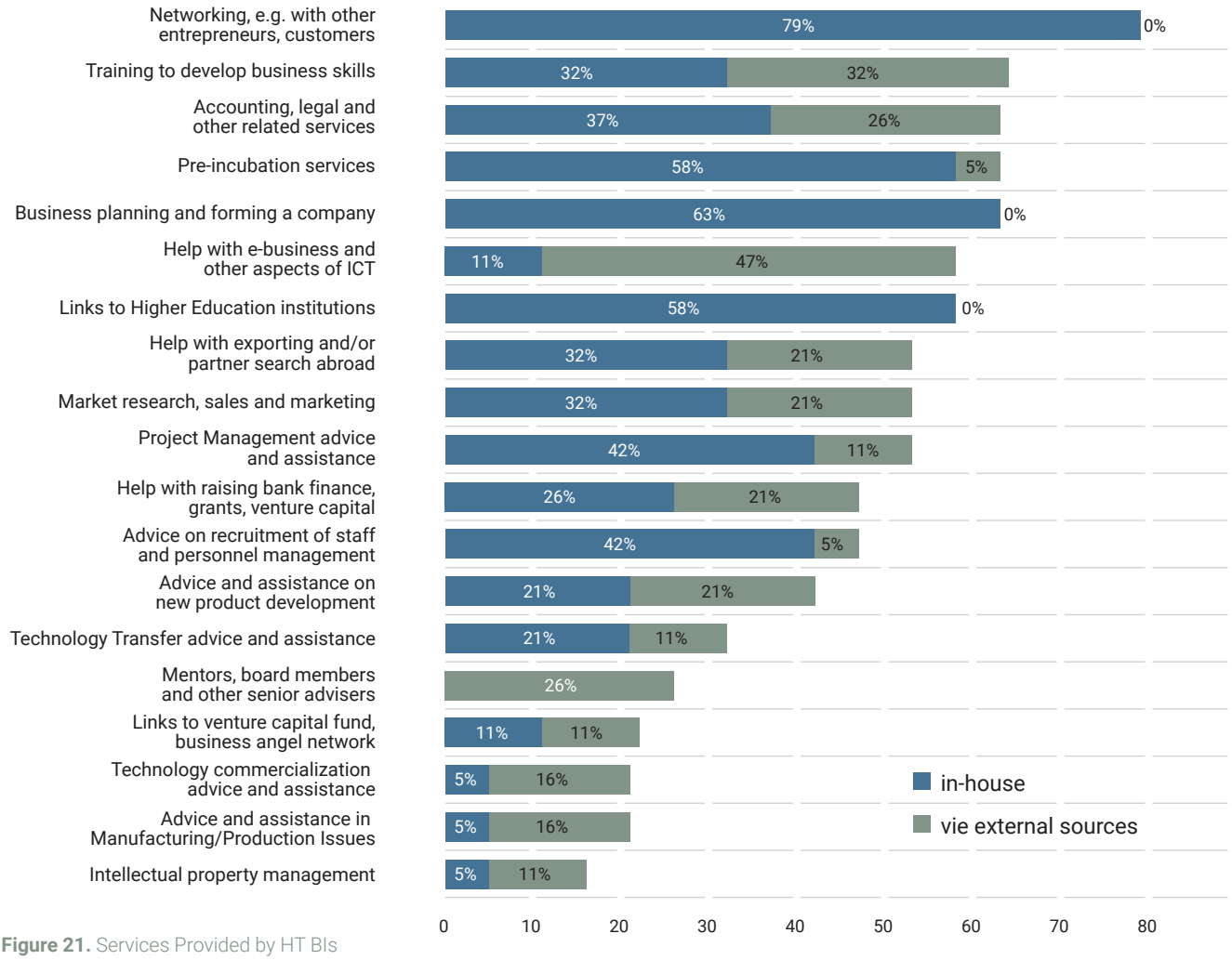


Figure 21. Services Provided by HT BIs

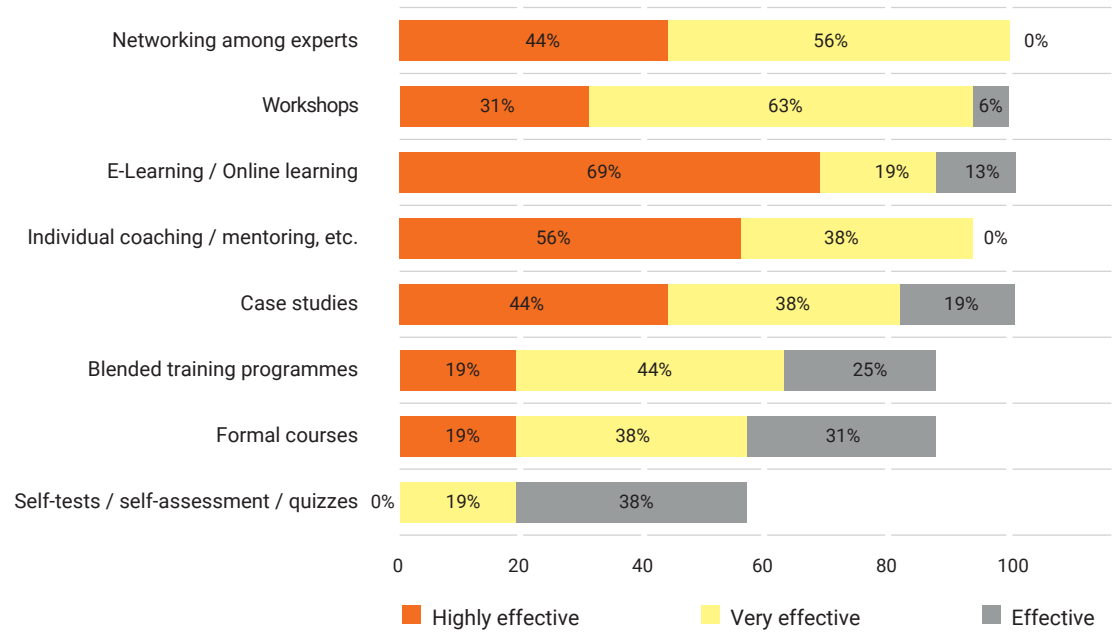


Figure 22. Effectiveness of Capacity Development Business Services Provided by HT BIs

Cooperation of HT BIs with other partners

Cooperation with other SME and innovation support institutions relates mostly to the sharing of resources and exchange of experiences and good practices. Interestingly, only a few HT BIs reported joint projects with their peers in support of tenant companies. This demonstrates an overall low level of cooperation amongst the BI organisations, and an obvious area for future improvement.

There are some notable exceptions to this, however, with a good example being STP in Belgrade, which hosts the BITF incubator, as well as other Innovation related support e.g. the Innovation Fund, and networks extensively both domestically and internationally.

Connecting corporate/industry challenges with respective tenant companies in HT BIs

There are some good examples of cooperation between industry, corporates and business incubators within HT BIs. These are aside from the obvious examples of the actual corporate incubators. These examples can be used as the basis for sharing of emerging good practices.

One case is that of ICT Hub, which supports connections between large industry and the start-up scene. During the peer review session, it was stated that the ICT Corporate cooperation is a main growth factor of the Hub. Another case worth mentioning is the Start up Center at the Faculty of Economics, which has a database of some 500+ companies and contacts with industry. Many businesspeople are involved in a mentoring network already, but there may be opportunities for the Center to further build its competitive advantage based on these contacts and clients.

A further model worth remarking on is the linkage between clusters and business incubators. For example, in Niš a positive example was observed, whereby a tenant and strategic partners of Think Innovative is NICAT – the Niš cluster of advanced technologies.

Cooperation of HT BIs with universities/faculties and other educational institutions

Cooperation with universities/faculties and other educational institutions was surprisingly reported in only a few cases. This is something that should be explored further, to identify better models and approaches for cooperation between HT BIs and academia.

There are some very good examples of practice. One example we might usefully mention, is that of the good relations between the University of Novi Sad and BI Novi Sad. Similarly, Start-up Center Niš is well located close to the technical faculties of the University of Nis, providing direct access to the pool of varied knowledge (technological, legal, marketing, etc.) and some prototyping equipment to test the product ideas is available as well. The affiliation with and the proximity to the University is good for raising the awareness among the young audiences of the availability of the start-up space and its services.

Summary of Support Services and Networking for SE BIs

There are some interesting findings related to the packages of services delivered through SE BIs, together with the nature of cooperation with other ecosystem actors, leading us to conclude the following:

- There is a wider variation in service provision within the SE BIs than that found in HT BIs, perhaps reflecting their relative maturity;
- An interesting finding is an apparent greater emphasis on export support than that found in the HT BIs;
- The package of core services delivered seem appropriate to meeting core technical development needs of a wide variety of SMEs;
- Individual coaching / mentoring is viewed as the most effective method for developing client capacities;
- Joint projects in cooperation with regional development agencies, clusters or municipalities are relatively common;
- Modes of cooperation with industry appear to be in areas that could be strengthened, as well as better cooperation with universities.

Services provided by the SE BIs

There are eight different services provided by more than two thirds of the SE BIs. This represents a greater variation than that found in HT BIs. In ranked order of provision, these are: training to develop business skills; pre-incubation services; help with exporting and/or partner search abroad; networking, e.g. with other entrepreneurs, customers; business planning and forming a company; advice on recruitment of staff and personnel management; project management advice and assistance; and market research, sales and marketing.

This is a wide portfolio of services to deliver effectively with the small management teams that we have observed in SE BIs. One of the most interesting findings from this list is the support to exporting and/or partner search abroad. A significantly higher proportion of SE BIs appear to be providing this than amongst HT BIs. This might be explained by the broader range of existing companies

with products found in SE BIs, but it is something worth investigating further.

As with HT BIs, access to board members and other senior business advisors is less common than would perhaps be desirable, given the effectiveness of this as a service delivery mode, and overall importance of mentoring to improve business management practice.

Perhaps less surprising is the limited focus on aspects of technology commercialisation, technology transfer, and access to equity finance, given the primary focus and client base of many SE BIs.

The five most commonly provided in-house services amongst SE BIs are (ranked in order): project management advice and assistance; pre-incubation services; networking, e.g. with other entrepreneurs, customers; business planning and forming a company; and advice on recruitment of staff and personnel management.

The five most common externally provided services are all covering very practically focused issues that both start-ups and post-start-up SMEs typically need: advice and assistance on new product development; help with raising bank finance, grants, venture capital; help with e-business and other aspects of ICT; and access to mentors, board members and other senior advisers; and advice and assistance in manufacturing/production issues.

Accounting and legal services as well as secondments of mentors, board members and other senior advisors are examples where servicing of clients is delivered through projects amongst some BIs. For example, POMAK from Zaječar is involved in several well-developed networks supportive of entrepreneurship promotion organization, notably the Serbian Development Agency, the Serbian Chamber of Commerce, but also the Regional Development Agency for Eastern Serbia (RARIS).

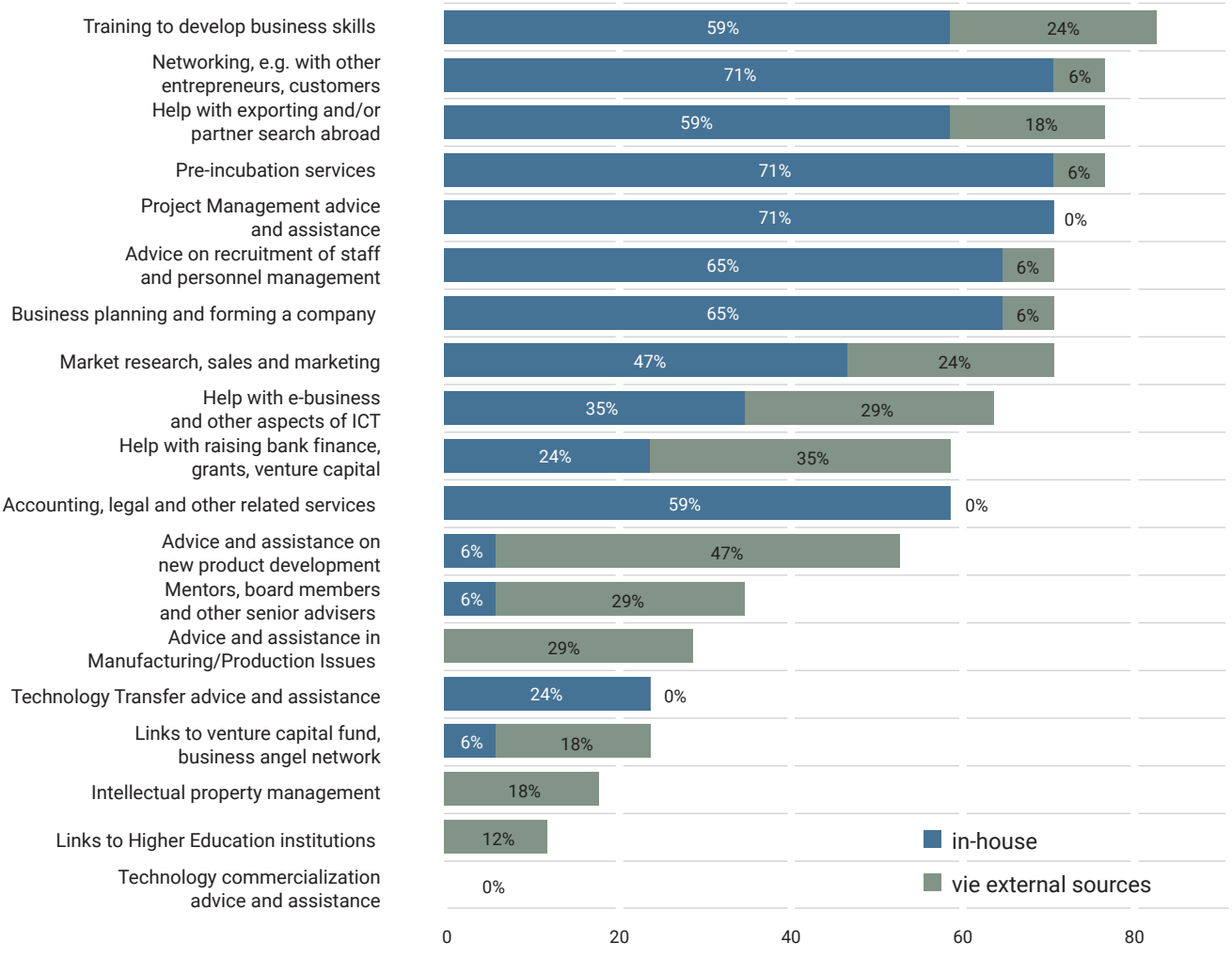


Figure 23. Services provided by SE BIs

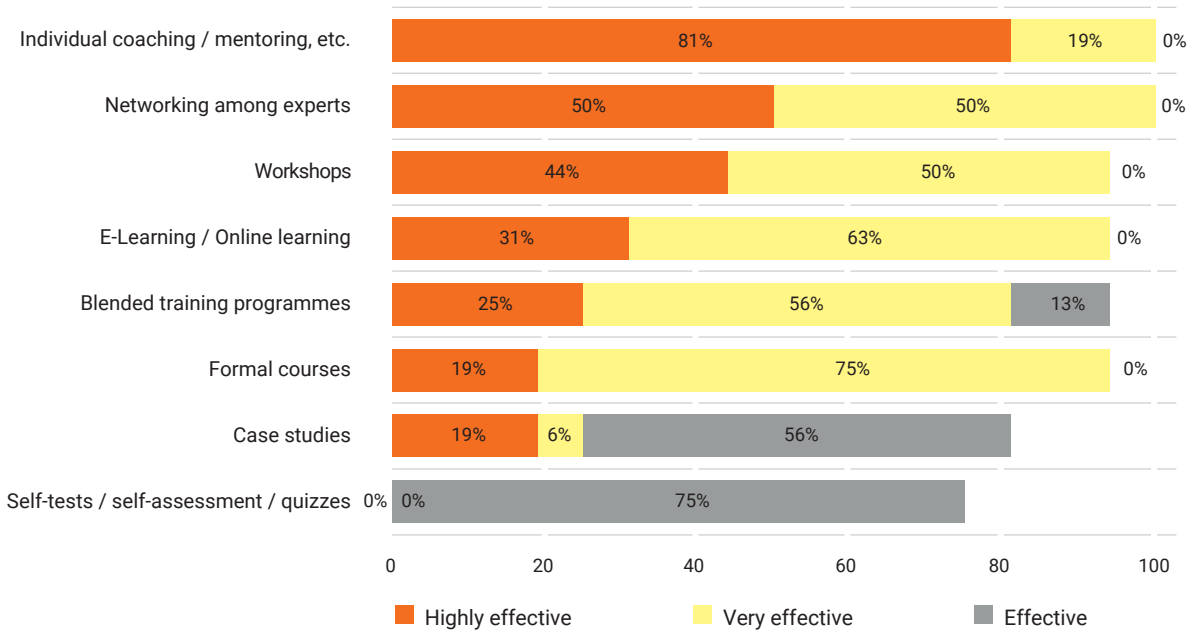


Figure 24. Effectiveness of Capacity Development Business Services Provided by SE BIs

Effectiveness of Business Service Delivery Methods for SE BIs

SE BI Managers indicated that the most effective way of learning and developing capacities is individual coaching / mentoring (80%), followed by networking amongst experts (75%) as presented in the Figure below. Workshops, online learning, blended and formal training are also valued as very or highly effective methods.

Cooperation of SE BIs with other partners

Cooperation with other SME and innovation support institutions is mostly realised through joint projects. Commonly stated partners include regional development agencies, clusters or municipalities. Exchange of experience and sharing experiences is reported in only a few limited cases.

BI Valjevo

Connecting corporate/industry challenges with respective tenant companies in SE BIs

With one exception amongst SE BIs, direct connection between corporate/ industry challenges and respective tenant companies is the only reported mode of industrial cooperation. Only StartIT reported other ways of cooperating, namely: representatives of corporates/industry providing mentorship/coaching to tenant companies, corporates/ industry representatives helping evaluate business potential of tenant companies and organize hackathons. As an example of direct connections working effectively, BIC Prokuplje had fully implemented a brownfield investment of the German investor LEONI in 2008, where the BIC staff had provided complete business logistics for this investment. Today, Leoni employ over 6000 workers in Serbia.

Cooperation of SE BIs with universities/faculties and other educational institutions

Cooperation between SE BIs and universities/faculties and other educational institutions is in general at a very low level and reported in only a few cases. These few examples are where representatives of tenant companies have delivered lectures and /or run business idea competitions. Even assistance in finding internships among tenant companies is reported in only two cases.

As examples where some cooperation has taken place, we might mention BI Pomak, which reported that they have joint projects with the private University Megatrand, as well as BI Subotica who organise education-business courses. The Faculty of Health, Legal and Business Studies has focused on the commonly referred to 'third mission' of universities, and development of the transversal enterprise competency, recognizing the need to establish BI Valjevo in 2015 with the goal of enabling their students to develop an entrepreneurial spirit and business ideas through self-employment, especially as each study program in the Faculty has a subject on entrepreneurship. This location enables students to have the opportunity to articulate ideas that can be developed and supported by the incubator.

6 Assessing Tenants' Needs for Business and Innovation Support services

Understanding the various needs of tenant companies for BI support and the degree to which they are presently being met by the BIs, is key to developing strategic directions and concrete actions to improve the general innovation performance of a country or region. Undertaking regular supply and demand side analysis is therefore standard practice for most developed countries. A BI tenant survey enabled us to undertake a rapid gap analysis to identify where present needs are not being met, or are no longer required and to take action to make suitable adjustments to their portfolio of offerings.

6.1 Description of the applied methodology

The interviews with the companies were conducted during the Peer review process, when one of the EUBID team members conducted the interviews with tenant companies. All tenants in each selected BI were approached through their BI management. 1-3 tenants from each BI initiative was interviewed for 15-20 minutes. In addition, where the tenant company was participating at the peer review workshop, this company was also interviewed. During some of the Peer review sessions tenant companies presented their businesses and responded to the additional questions made by expert team and Peers.

The questions in BI tenant questionnaire[71] were organised around the following areas:

- Background data on companies - providing basic information on companies and inputs that they invested in their own business;
- Initial contact, primary reason for the collaboration, i.e. main motivation to become a tenant of the BI and benefits, i.e. the most valuable aspect/added value of being a tenant;
- Evaluation of the services provided by the BI that also includes, Importance of the BI services for to the development of tenant business, regularity of using a BI services and tenant suggestion for the improvement of BI services.

The questionnaire included 8 questions in total, both structured (fixed) multiple choice response questions, and non-structured (open) questions. The Question on BI services (question number 3) is closed type, which means that the tenant companies have to choose from the list which BI services they are using and which one they would like/need to use. This is the same list of services as the one that the BI managers responded during the assessment phase included in Quick scan questionnaire[72]. This enabled the team to analyse whether the BIs are providing the services that are needed by the tenant companies, and prepare an overall gap assessment.

Some questions are open type, since the TAT wanted to learn more about i.e. the way how services can be improved or what are benefits of being a tenant of the BIs are.

[71] EUBID Peer Review Approach, User Manual, Annex 6 BI initiative tenant questionnaire, June 2019.

[72] EUBID QUICK SCAN QUESTIONNAIRE, March 2019.

Sample

In total 36 tenant companies filled in the Questionnaire, 15 from Self-employment BIs and 21 from High tech BIs. More than half of the companies were additionally interviewed during the Peer review sessions. Although this is in total a small number of enterprises, statistically they should represent well the tenant structure of incubators in Serbia, since they were selected by and approached through the BI management.

Data processing

All data collected from the interviews were entered into an excel file, enabling further analysis, definition of common issues, best practice and particularities.

6.2 Findings and analysis – Tenants in the BIs

Given many of the similarities between HT and SE BIs found in the supply side analysis of Chapter 5, findings from the demand side analysis of the tenants in HT and SE BIs are presented in parallel. This enables easier comparison among two groups of tenants and will lead also to the better understanding of any similarities or differences among these two groups.

6.2.1 Background data on companies

HT/SE: A high percentage of ICT companies in HT BIs is not surprising, but they are also widely represented in SE BIs. Marketing and sales are represented in both type of BIs. Additionally, in SE BIs there are manufacturing based companies, for example, textile industry (Senta), furniture (Prokuplje), metal processing (Užice) etc.

An overall conclusion is that BIs are not sector focused, corresponding with conclusions made by the EU4TECH project. The reasons, however, may be different. First, there are not sufficient start-ups and there is no critical demand for the sector specific support services. Second, the BI may not be strategically located in the industry centres or nearby large industry, where they could mobilize a critical mass of start-ups involved in one sector.

6.2.2 Relation with the BIs

The Table 14 and Table 15 present the overview of the relations of the tenant companies with the BIs. More precisely, they provide information on how the initial contacts were made, what the primary reason for the collaboration was, and finally what are the benefits of being a tenant of the BI. The first table relates to the HT BIs and the second to the SE BIs.

Initial contact

HT: Most of the tenant companies in HT BIs indicated that they found out about the BI through personal contacts (12 responses), internet i.e. social media, web-site (4 responses), word of mouth (3 responses) and other ways, i.e. promotion at the training course, contact via survey etc. Tenants from NIT Novi Pazar, Think Innovative, STP Čačak, BI Novi Sad mostly responded that the initial contact was made through personal contact, while tenants in Start-up Center Niš made contact because of internet promotion.

SE: Similar findings were found for the companies in SE BIs, where almost all tenants responded that the initial contact with the BI was made because of personal contacts as well as recommendations made by their contacts at the faculties, municipalities or Chamber of Commerce. Only one company from BIC Prokuplje responded that the initial contact was made because of internet promotion and one company from Pomak Zaječar responded that the initial contact was made at the promotional event of the BI.

Primary reason for the collaboration

HT: In most of the cases, tenants indicated that their main motivation to become a tenant of the BI is a community network and visibility. This was followed by a good working environment and to correct a lack of management knowledge. The community network and visibility were indicated by all interviewed companies. Only one company from BI Kruševac stated that low costs for working space is a primary reason for the collaboration. The interviewed tenants of Start-up Center Niš pointed out that their motivation for incubation was the proximity of laboratories and specialized equipment, given that the SC was located within the faculty building.

SE: Almost all tenants of the SE BIs responded that the primary reason for the collaboration is adequate working space. Only very few also indicated other reasons for collaboration like acquiring new knowledge, support in establishing the company and networking. Tenants, whose activity includes manufacturing, cited the existence of production halls within BI as an advantage. Apart from that, grants received thanks to the help and support of BI, and connections with the business sector have been shown as an important benefit.

Benefits of being a tenant of the BI

HT: The most valuable aspect/added value of being a tenant is community, networking and working environment, which confirms the primary reasons for the collaboration as stated above. Also, several answers indicated that tenants are receiving other benefits like legal consulting and acquiring new clients on the market. Tenants in Start-up centres in Belgrade and Niš are satisfied with the provision of services for product testing and validation using specialised equipment in collaboration with faculties.

HT BIs (21 tenants)	Initial contact	Primary reason for the collaboration	Benefits	Service improvements
BI Novi Sad (2)	▪ personal contact	▪ community network, ▪ working space, ▪ consulting	▪ working environment, ▪ equipment, ▪ great community	▪ pricing, ▪ acceleration, ▪ funds,
Start-up Centre, Niš (3)	▪ personal contact, from Faculty staff, ▪ internet (website)	▪ community and visibility, ▪ close vicinity of labs, ▪ personnel, ▪ good working environment, ▪ lack of special equipment	▪ networking, ▪ visibility, ▪ testing products, ▪ legal and marketing assistance	▪ dedicated server, ▪ project management courses, ▪ unique software, ▪ computer equipment, ▪ more labs and technology
NIT Novi Pazar (3)	▪ personal contact, from Faculty staff	▪ working space, ▪ lack of management knowledge	▪ legal consulting	▪ better facilities, ▪ mentoring, ▪ bigger team of BI, ▪ better visibility, ▪ access to funds for financing
ICT HUB, Belgrade (3)	▪ personal contact, ▪ internet, ▪ BI asked them for survey	▪ community network, ▪ events, ▪ visibility and community	▪ building network in Serbia and region, ▪ networking, ▪ new clients on local market	▪ better facilities, ▪ virtual office assistance
BIC Kragujevac (1)	▪ personal contact	▪ good working environment		
Think Innovative, Niš (3)	▪ internet (social media), ▪ word of mouth	▪ networking, ▪ good facilities, ▪ accessibility		
STP Čačak (2)	▪ personal contact	▪ good working environment, ▪ creating IT ecosystem	▪ networking and business support	▪ creating IT ecosystem, ▪ attracting young people
BI Kruševac (2)	▪ personal contact	▪ working space, ▪ low costs for working space, ▪ consulting	▪ equipment, ▪ meeting rooms, ▪ working environment	▪ more trainings, ▪ seminars
Infostud HUB, Subotica (1)	▪ personal contact	▪ help at beginning of business, ▪ good facilities	▪ nice working space	▪ legal consulting
Start-up Centre, Belgrade (1)	▪ at an entrepreneur-ship course	▪ lack of management knowledge	▪ working space, ▪ mentorship, ▪ lectures, ▪ product validation	▪ access to funds for financing

Table 14. Tenant companies relation with HT BIs

SE BIs (15 tenants)	Initial contact	Primary reason for the collaboration	Benefits	Service improvements
BIC Užice (2)	▪ personal contacts (from Municipality and Chamber of Commerce)	▪ adequate working space and lease, ▪ production halls, ▪ services	▪ adequate facilities, ▪ security of equipment, ▪ lower costs, ▪ visibility	▪ legal services, ▪ better equipment, ▪ lab, ▪ product development services
BI Zrenjanin (1)	▪ personal contact	▪ lease of working space, ▪ business development	▪ office space	▪ better facilities, ▪ lower rental fee
BI Valjevo (2)	▪ personal contact, from Faculty staff	▪ networking, ▪ working environment, ▪ acquiring of new knowledge, ▪ free space ▪ equipment	▪ equipment, ▪ nice working space, ▪ good cooperation with BI	▪ more connection with other people
BIC Bački Petrovac (1)	▪ personal contact	▪ adequate working space and lease	▪ connection with business sector	▪ increase of office space, ▪ IT support, ▪ more advertisement
BIC Bor (1)	▪ personal contact	▪ adequate working space and lease	▪ rental fees, ▪ administrative services, ▪ security of equipment	▪ bigger facilities, ▪ lower rental fee
BI Majdanpek (1)	▪ recommended by the Municipality	▪ office space	▪ office space	
BI Senta (2)	▪ personal contact	▪ adequate working space and lease, ▪ meeting room	▪ Networking, ▪ working space, ▪ halls	
BIC Prokuplje (2)	▪ personal contact, ▪ internet (website)	▪ BI help them to establish company, ▪ adequate working space and lease	▪ free office space, ▪ accounting services, ▪ working space, ▪ legal services, ▪ networking	▪ obsolescence of equipment
Business Dev. Centre Kragujevac (2)	▪ personal contact	▪ connection with business sector, ▪ exchange program	▪ connection with business sector, ▪ received grants, ▪ connection with business sector	
POMAK, Zaječar (1)	▪ promo event	▪ working space, ▪ productivity	▪ rental fees	▪ better equipment

Table 15. Tenant companies relation with SE BIs

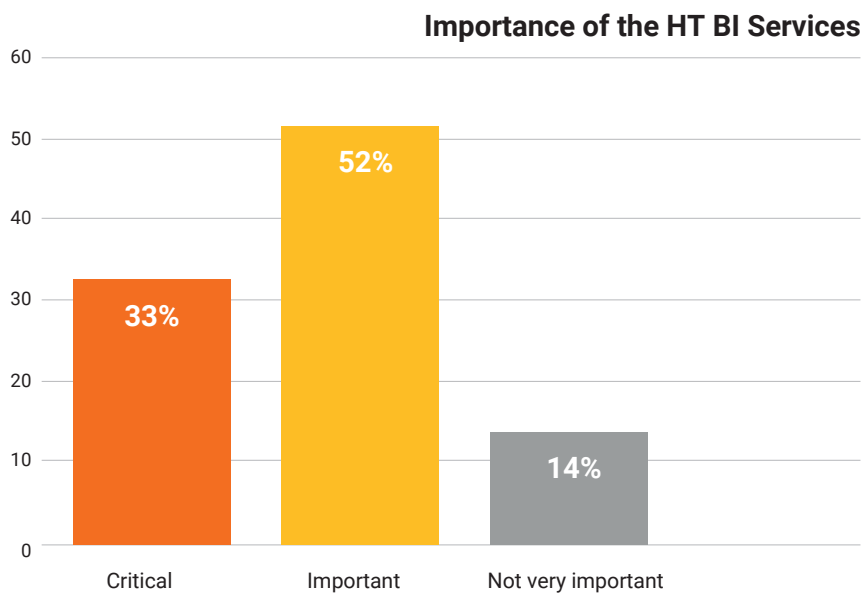


Figure 25. Importance of the BI services for development of tenant company in HT BIs

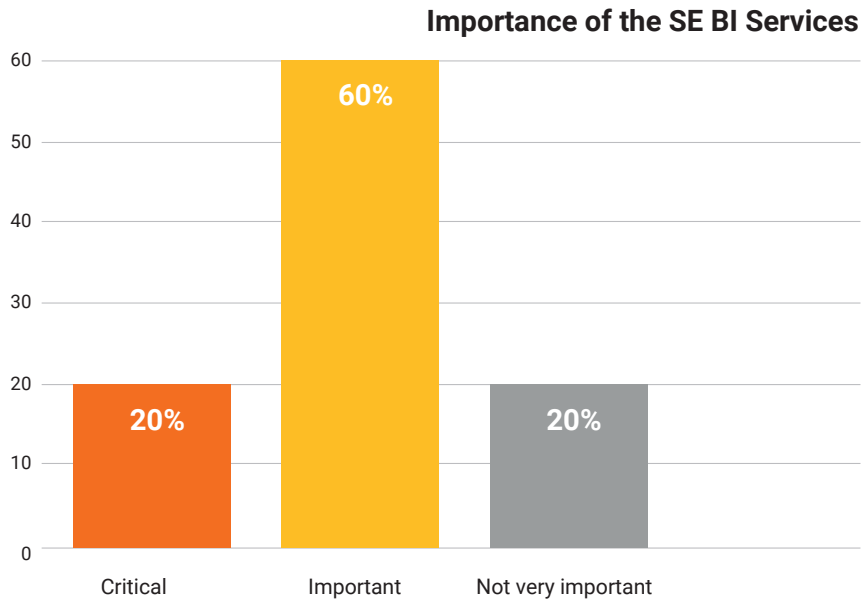


Figure 26. Importance of the BI services for development of tenant company in SE BIs

SE: For the tenants in the SE BIs, apart from the working space, an important benefit includes grants received thanks to the help and support of BI, and connections with the business sector. This is a good indication since whilst for all of the tenants the primary reason for collaboration was working space, by being tenants they also received other benefits as well, like needed services, access to networks etc.

Importance of the BI services

HT: Figure 25 indicates the perceived importance of support provided by the HT incubators for development of the companies. More than 50% of tenant companies indicated that the support provided by the incubator for development of their company has been important, with 33% saying it was critical for development and that without this support the company would not have been successful.

During the interviews, it was indicated by respondents that the services provided are slightly more important than infrastructure. An interesting finding is that 14% reported that this support was not very important and that the company would have achieved the same results in other circumstances.

SE: The importance of support provided by the SE incubators for development of the companies is presented in the Figure 26. In total, 60% perceive BI services as important, whilst 20% equally reported that this importance was critical. The same proportion (20%) stated that the support was not very important.

Regularity of using BI services

We also wanted to know how regularly tenant companies are using BI services (apart from facilities related to premises).

HT: As presented in Figure 26, less than half (43%) of tenants reported that they are using services daily, regularly and occasionally. This leads to assumption that the main purpose of tenants to be hosted by business incubator is not necessarily the provision of the business incubation services, but rather low rent price, convenient or attractive location, etc.

SE: The answers that are received from the tenants of SE BIs regarding the regularity of using a BI service does not demonstrate a clear pattern. As presented in Figure 27, almost an

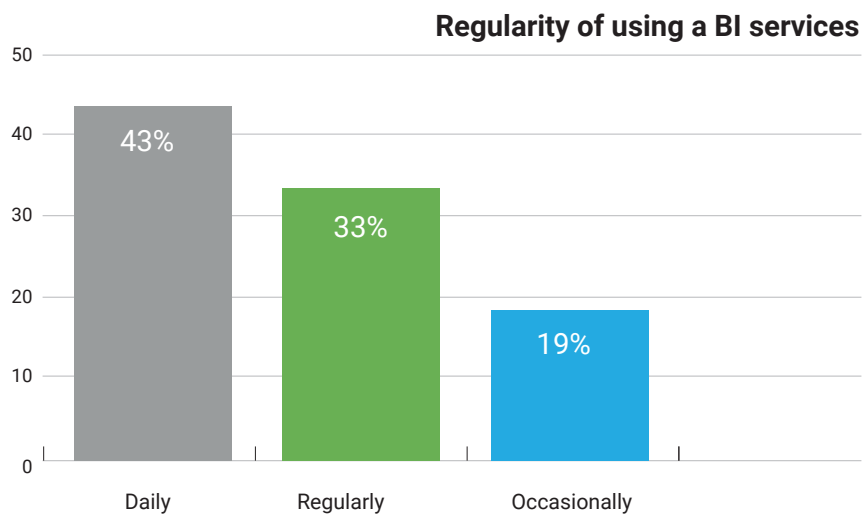


Figure 27. Regularity of using a HT BI services

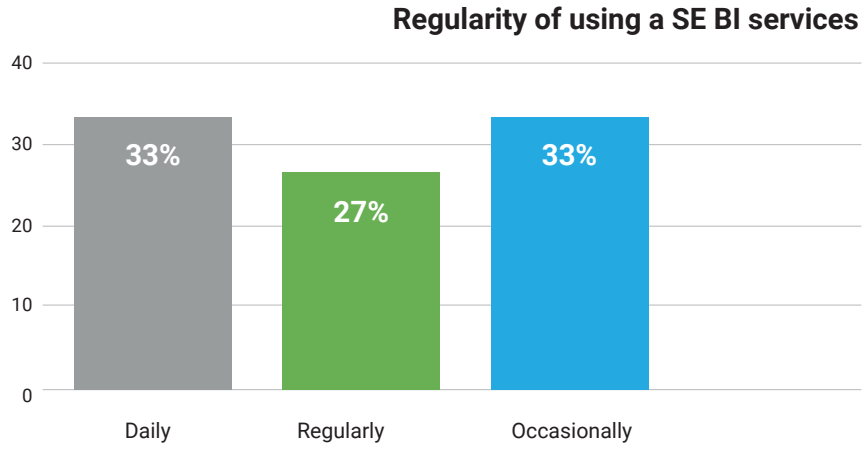


Figure 28. Regularity of using a SE BI services

equal number of tenants reported that they are using services daily, regularly and occasionally.

Service improvements

HT: Tenants provided varying answers regarding needed service improvements. During the interviews, most of the tenants emphasized the need for BI to assist in accessing funds for financing their business. This was confirmed by BI managers at the Peer review workshops. Tenants in Novi Sad recognize the importance of establishing acceleration support and services. There were some individual proposals for the introduction of new courses and seminars, for example a project management course. Although our data analysis determined that supply and demand for accounting and legal services are fairly well balanced, some residents have suggested needs for improvements in these services, in particular legal issues. The need to purchase certain software and equipment for product development was also noted.

SE: Most of the service improvements should be related to legal services, providing better equipment, IT support, and more space for renting under more favourable conditions (prices). Tenants in BIC Užice, where most have their own products and use production facilities, suggested setting up a BI testing laboratory, with appropriate equipment for product development and validation. Advertising and marketing services are also highlighted as important areas for improvements.

Business and innovation support services

In addition to providing space and administrative services for incubator tenants, business support services are essential. Additionally, for technology incubators and science and technology parks, R&D and Innovation services are also required. The status of the current offer of these services has been identified through the performance assessment of BIs in Serbia and the results of the survey are presented in Chapter 5 of this study as supply side analysis. Within this demand side analysis, the survey results from the tenants of BIs determine what services tenants are actually used and which services tenants would like to use. The results of that analysis are presented below.

Figure 29, Figure 30 and Figure 31 present services that tenant companies receive, would like to receive and the gap between demand and supply in BIs supporting high-tech startups.

The findings can be summarized as follows:

- Only 6 service out of 19 to be considered standard in BI operations were exploited by more than a quarter of tenants: networking (e.g. with other entrepreneurs, customers); accounting, legal and other related services; business skills training; advice on human resource (HR) issues; links to higher education (HE) Institutions; and pre-incubation services;

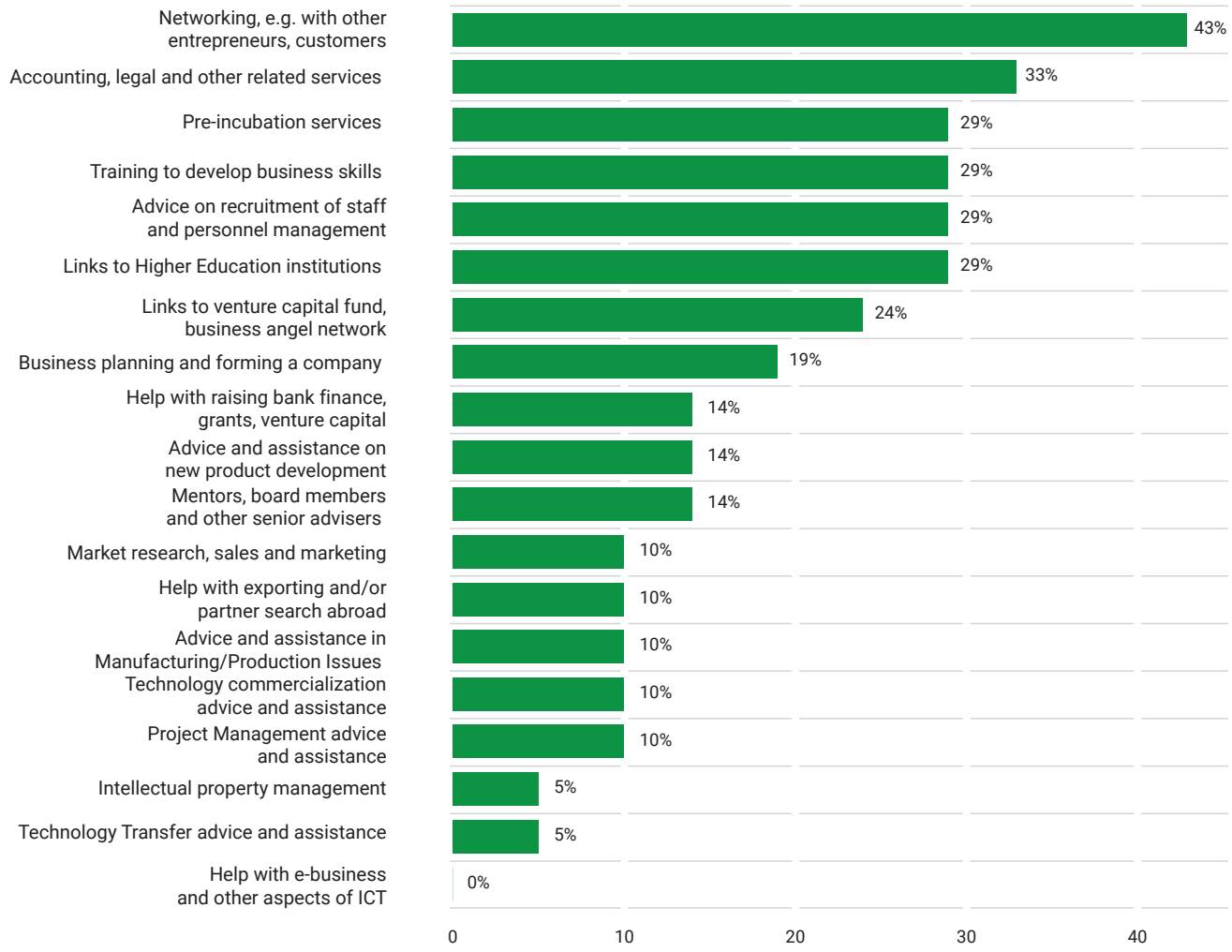


Figure 29. HT BIs services that tenants receive

- Only half of these six are in balance – where difference between received services and services that tenants would like to receive is less than 10%. These are accounting, legal and other related services (gap of 5%); training to develop business skills (gap of 4%), advice on HR issues (excess of 4%). To be noted that these services are very basic and relevant to all business incubators around the world and it should be emphasized at this point that the current balance supports initial conclusion that current standing of BIs in Serbia in between 1st and 2nd generations (Figure 4).

- The most used service is related to networking of tenants with other entrepreneurs and customers which helps to build a business community and culture, though it is sometimes a matter of balance how actively should tenants be involved in all these activities. Usually they naturally prefer to focus on their current business issues instead of participating in community events. In other words, most incubators in the world face the issue of engagement of tenants into their initiatives.

- One third of respondents used pre-incubation service and trainings for business skills development, to develop business models and entrepreneurial skills, provided by incubators, start-up centres and STPs in university cities (Novi Sad, Belgrade, Nis, Kragujevac, Čačak and Novi Pazar). The same number of respondents reported that they used the BI service to connect with Higher Education institutions. Through collaboration with faculties, as educational institutions, BIs assisted residents (33%) in recruiting staff and personnel management. However, these two services are not among those that tenants would like to receive further. Since these are very important services in service portfolios of any HT BI, we presume

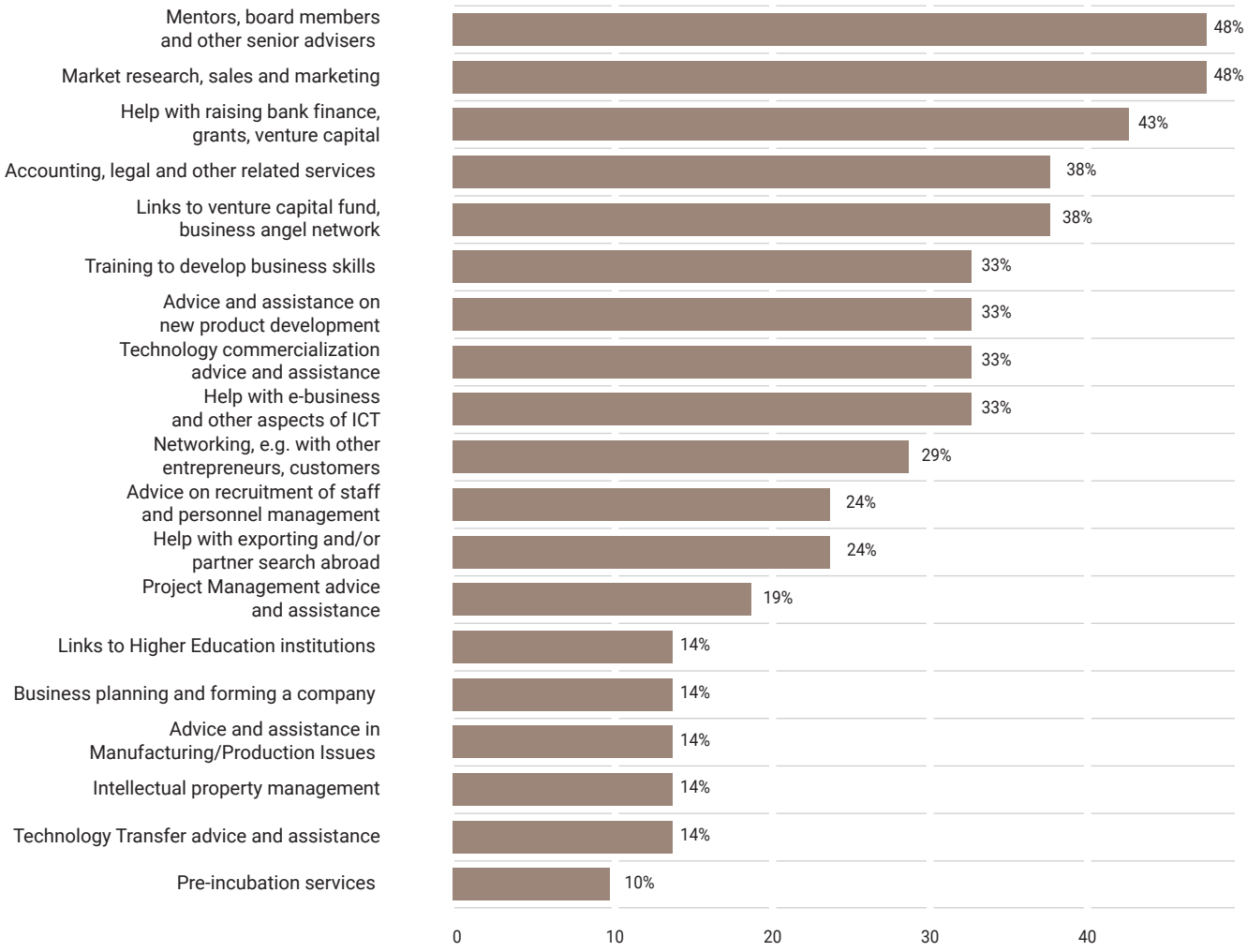


Figure 30. HT BIs services that tenants would like to receive

that reasons for lack of demand of the services are either bad experience in previously received instances or lack of promotion of benefits of services from BI side. In both cases, capacity building in the fields would be recommended solution.

- 48% of respondents would most like to receive services for market research, sales and marketing, whereas only 10% received this service. However, only 33% of HT BIs offered these services. The lack of supply of in-house services by BIs is provided through external services (21% BIs). This clearly indicates the need to improve the scope of the service with more specific and targeted approach when service is provided not only through open workshops, but also through individual coaching and mentoring.

- A similar situation is found with regards to needs for business services provided by mentors, board members and senior advisers These are required by 48% of surveyed tenants, with only 14% receiving the service. No HT BIs offer this in-house service, and a quarter of the BIs offer it only through external service and projects. Likely, none of the BIs is capable to maintain mentors in-house and that could be made available through strong links with alumnis, industrial companies operating in the region or national network of mentors operated by RAS.

- There was a need to support tenants in raising bank finance, grants, venture capital funds (43%), as only 14% received the service. This service is provided by a quarter of incubators as in- house service and by a fifth through external services. In order to address this issue, BIs need to establish closer links with business angels, venture capital funds and individual investors to organize

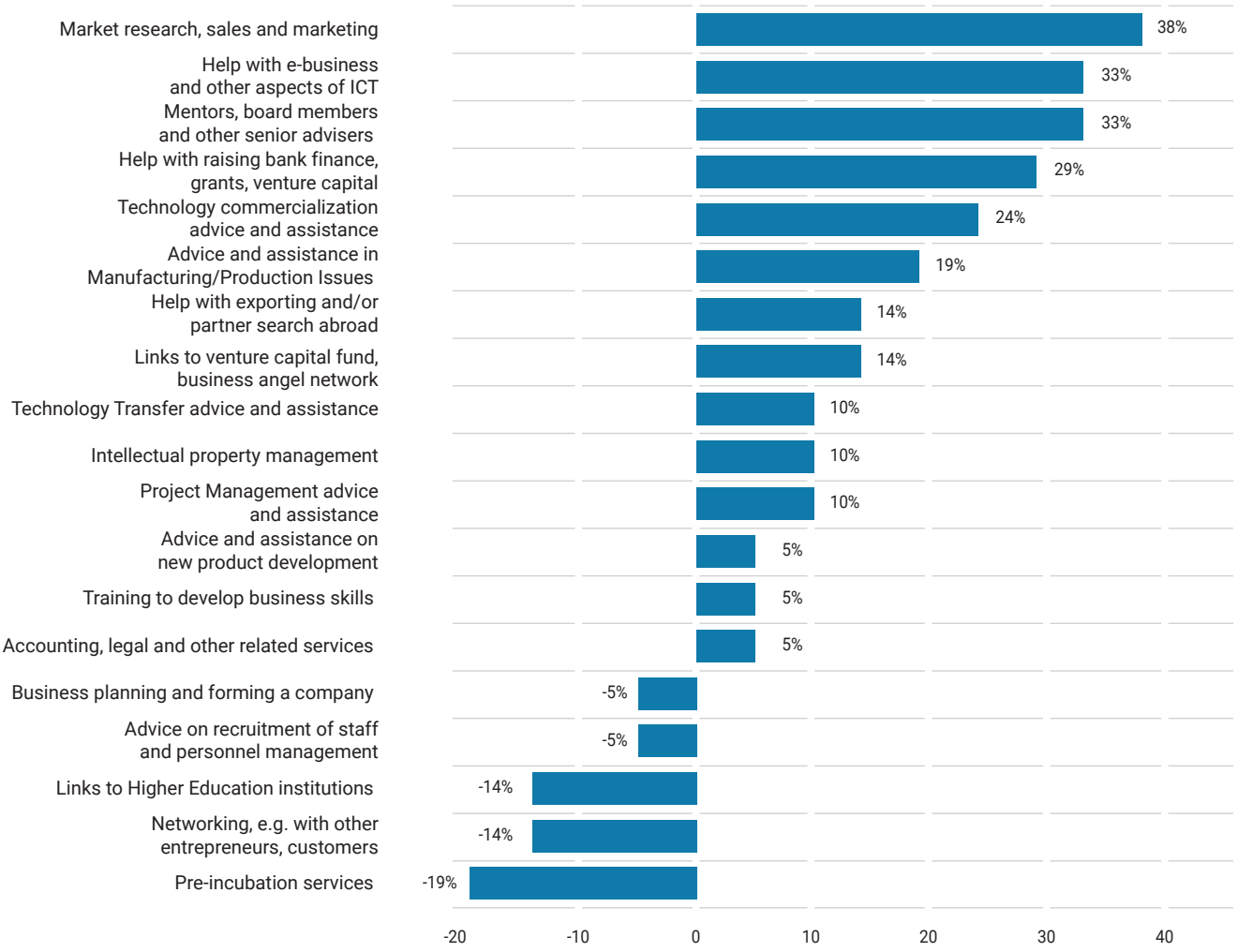


Figure 31. Main Gaps in service provision in HT BIs

periodic pitch events when start-ups would have presented the opportunity to introduce their business ideas to investors. It should be underlined here that this incentive is responsibility not only of BIs, but of investors as well and these links improve while the culture of exploitation of investment funds develops.

- Other most accessed services have surplus in supply side comparing to if tenants would like to receive those services. The major discrepancies between what is received and offered are for services related to help with e-business and other aspects of ICT. These are reported not to be used by any tenant, but with a third of all tenants stating that they would like to receive this service. HT BIs reported that this service is offered by a third of incubators as an in-house service, and by a third of incubators through external service provision, so indicatively there is an incubator supply that can meet the stated need of tenants. The question is whether the tenants are satisfied with the quality of the service, or are not aware of that which is on offer.

- One-third of tenants need incubator support in new product development and technology commercialization, with only a few HT BI tenants receiving services (10% and 14%, respectively). There is an evident problem in providing this service, since only 5% of incubators offer technology commercialization services in-house, and 16% as external service. Only 21% of incubators support in-house development of new products, with the same number of BIs relying on external services.

For SE BIs we present similar comparison between services received, those that tenants would like to receive and the gap between supply and demand of the services in Figure 32, Figure 33 and Figure 34.

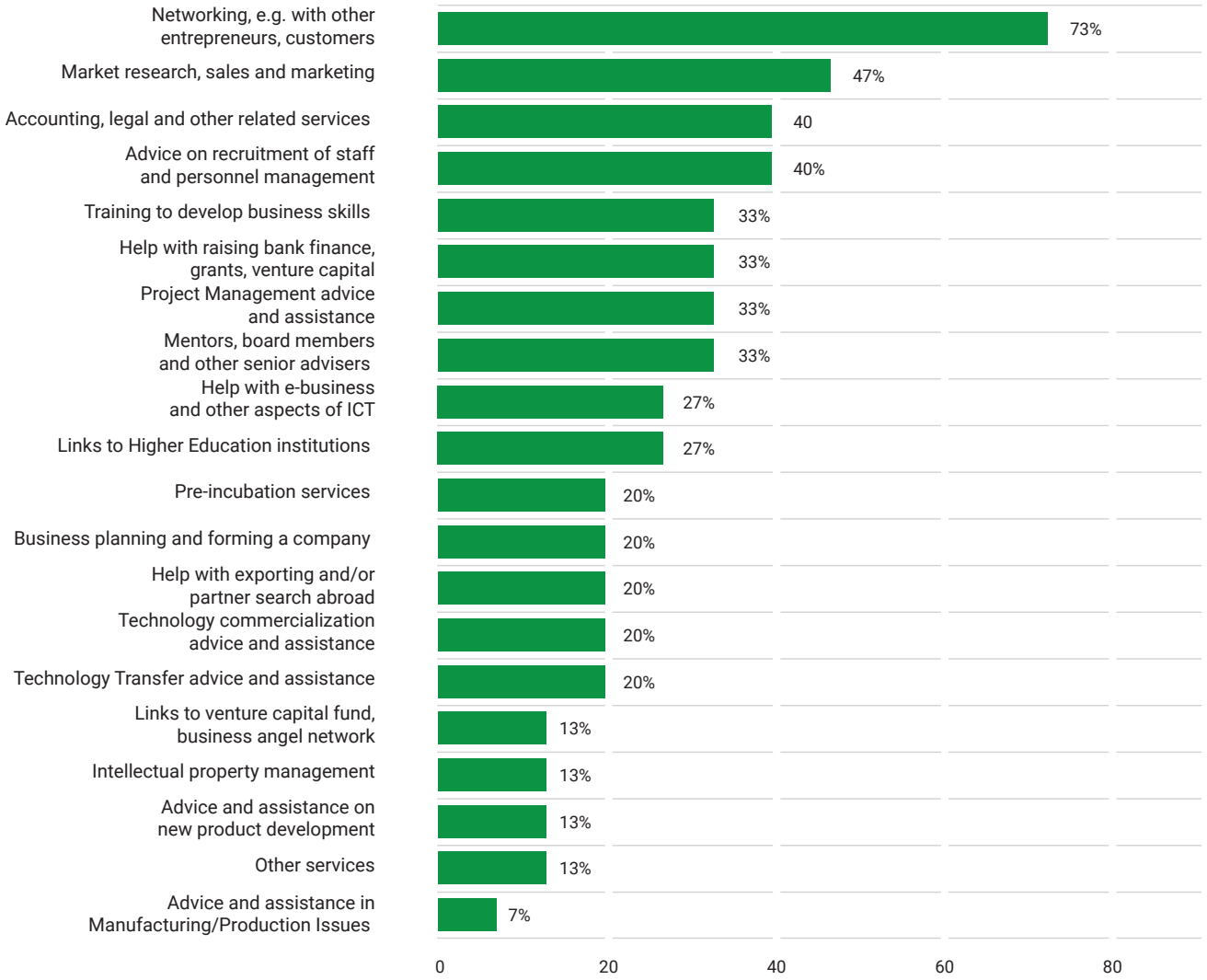


Figure 32. SE BIs services that tenants receive

There is a noticeable different pattern in the services that SE BI clients access, or would like to access. Nine different services are used by more than a quarter of clients, a considerably wider range than found in HT BIs. The findings can be summarized as follows:

- Results demonstrate that there are no considerable gaps in service received and service would like to receive. 8 services – help with e-business and other aspects of ICT (gap of 7%); help with exporting and/or partner search abroad (gap of 7%); business planning and forming a company (gap of 7%); Project management advice and assistance (balance); Advice and assistance in manufacturing/production issues (balance); Advice and assistance on new product development (balance); Intellectual property management (balance); links to HE institutions (excess of 7%) – are in balance, i.e. difference between received services and services that tenants would like to receive is less than 10%. Whilst all other services show significant excess.

  Reasons for such a disparity are twofold: firstly, SE BIs do not take proactive position in provision and fail to demonstrate benefits of the services to their tenant companies and tenants are not aware of possibility to receive services in addition to space rent; secondly, profiles of tenants suggests that their main interest to stay with business incubator is space. The latter assumption is well supported by the fact that networking service for tenants, which is main instrument to build business community, exceeds the demand by 53%.

- 47% and 40% of tenants, respectively, used market research, sales and marketing, accounting, legal and other related services and

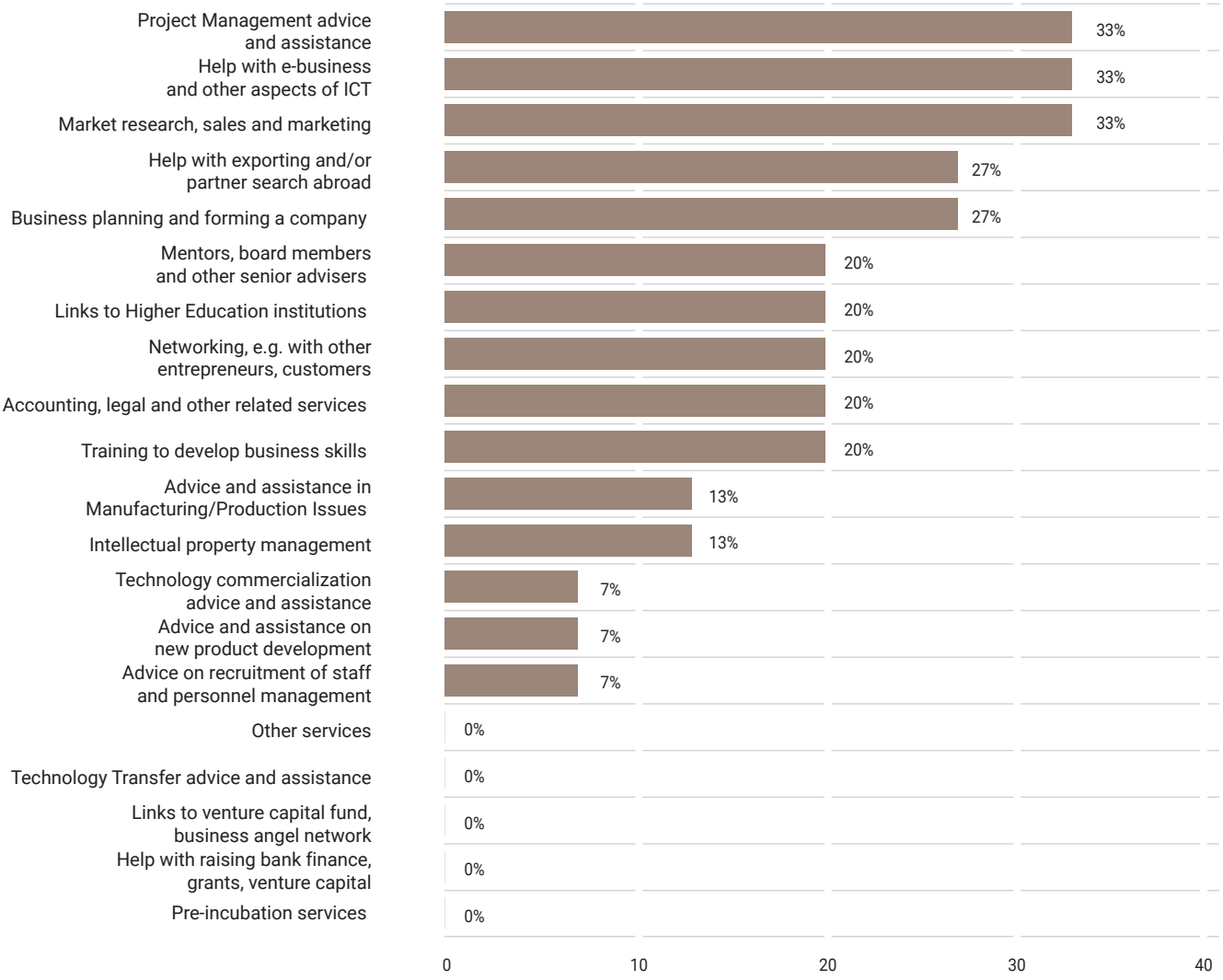


Figure 33. SE BIs services that tenants would like to receive

advice on recruitment of personnel and personnel management. Similarly to summary of findings for HT BIs, these services are very basic and relevant to all business incubators around the world and it supports initial conclusion that current standing of BIs in Serbia in between 1st and 2nd generations (Figure 4).

- One-third of interviewed tenants completed business skills development training and used incubator assistance with financial services, project management tips and mentoring. The services that the tenants would like to receive are help with e-business and other aspects of ICT, project management advice and assistance.

- A quarter of tenants said they had used links with Higher Education Institutions as a service. 20% of tenants would have liked to use the service, but since the SE BIs did not report offering the service, the tenants apparently had to access the assistance from other institutions or HT BIs.

- There is a gap in supply and demand for advice and assistance on new product development wanted by 13% and only 6% of SE BIs offer the first service in-house and almost half of them through external services. Insights from visits to SE BIs and peer reviews suggests that most tenants of SE BIs would appreciate and benefit from such a service as there are numbers of individuals or micro/small companies producing their own products. Furthermore, availability and promotion of the service would contribute in attraction of

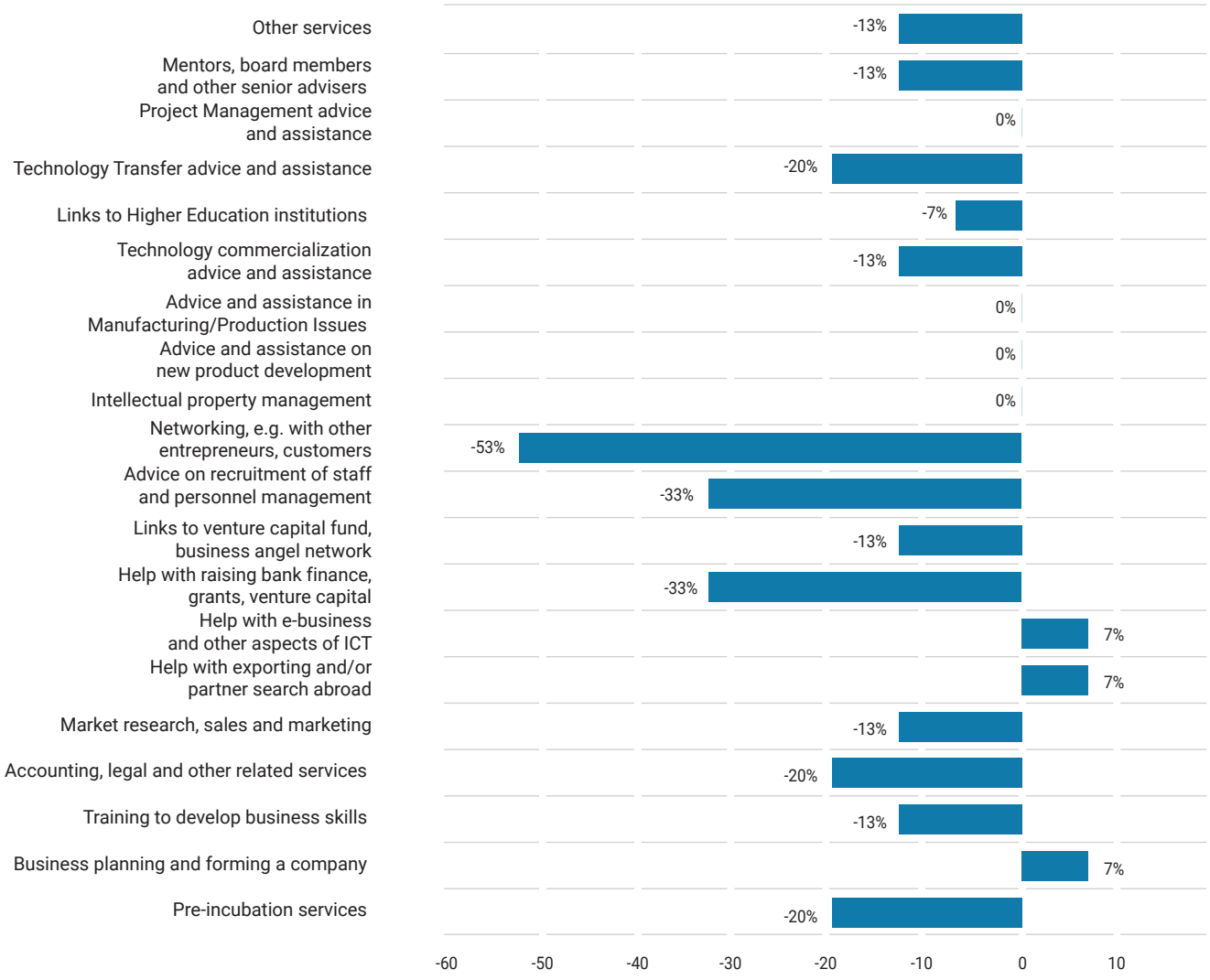


Figure 34. Main Gaps in service provision in SE BIs

other small entrepreneurs to use BI services including facilities.

- It is curious that 70% of the BIs offer pre-incubation services, but that only 20% of tenants found them beneficial, whilst others did not wish to use them. Again, assumption is made that SE BIs fail to demonstrate benefits of the services to a community in order to reach out to new clients and community is not aware of possibility to receive services in addition to space rent.

6.3 Gap Assessment between BI Service Supply and Tenant Demand

In order to identify overall gaps between supply and demand, comparative survey results and responses provided by BI managers (service supply) were analysed in correlation with tenants need (service demand). The findings are presented in Table 16 (for HT BIs) and Table 17 (for SE BIs).

For HT BIs, it is evident that there is a gap in the delivery of services due to the lower supply of in-house services than demand, even with the involvement of external service providers, for the following services:

- Mentors, board members and other senior advisers (supply – 0%, demand – 48%, gap – 48%);
- Technology commercialization advice and assistance (supply – 5%, demand – 33%, gap – 28%);

Service Gaps – HT BIs	Less supply by BI than demand	Well balanced	More supply than demand
Market research, sales and marketing	√		
Mentors, board members and other senior advisers	√		
Help with raising bank finance, grants, venture capital	√		
Links to venture capital fund, business angel network	√		
Advice and assistance on new product development	√		
Technology commercialization advice and assistance	√		
Intellectual property management	√		
Advice and assistance in Manufacturing/Production Issues	√		
Accounting, legal and other related services		√	
Training to develop business skills		√	
Help with e-business and other aspects of ICT			√
Networking, e.g. with other entrepreneurs, customers			√
Help with exporting and/or partner search abroad			√
Advice on recruitment of staff and personnel management			√
Project Management advice and assistance			√
Business planning and forming a company			√
Links to Higher Education institutions			√
Technology Transfer advice and assistance			√
Pre-incubation services			√

Table 16. Main Gaps in Service Provision by HT BIs

- Links to venture capital fund, business angel network (supply – 11%, demand – 38%, gap – 27%);
- Help with e-business and other aspects of ICT (supply – 11%, demand – 33%, gap – 22%);
- Help with raising bank finance, grants, venture capital (supply – 26%, demand – 43%, gap – 17%);
- Market research, sales and marketing (supply – 32%, demand – 48%, gap – 16%);
- Advice and assistance on new product development (supply – 21%, demand – 33%, gap – 12%);
- Intellectual property management (supply – 5%, demand – 14%, gap – 9%);
- Advice and assistance in manufacturing/production issues (supply – 5%, demand – 14%, gap – 9%).

For SE BIs, again, the situation is much different as there are no evident gaps in delivery and demand of the services. In a contrary, SE BI managers indicates that their BIs have most of the services in-house, however, tenants are not using those to a desired extent:

- Pre-incubation (supply – 71%, demand – 0%, excess – 71%);
- Advice on recruitment of staff and personnel management (supply – 65%, demand – 7%, excess – 58%);
- Networking, e.g. with other entrepreneurs, customers (supply – 71%, demand – 20, excess – 51%)
- Training to develop business skills (supply – 59%, demand – 20%, excess – 39%);
- Accounting, legal and other related services (supply – 59%, demand – 20%, excess – 39%);
- Business planning and forming a company (supply – 65%, demand – 27%, excess – 38%);

Services - SE BIs	Less supply by BI than demand	Well balanced	More supply than demand
Links to Higher Education institutions	√		
Mentors, board members and other senior advisers	√		
Intellectual property management	√		
Advice and assistance on new product development	√		
Advice and assistance in Manufacturing/Production Issues	√		
Technology commercialization advice and assistance	√		
Help with raising bank finance, grants, venture capital	√		
Market research, sales and marketing		√	
Help with e-business and other aspects of ICT		√	
Technology Transfer advice and assistance		√	
Project Management advice and assistance			√
Business planning and forming a company			√
Help with exporting and/or partner search abroad			√
Training to develop business skills			√
Accounting, legal and other related services			√
Networking, e.g. with other entrepreneurs, customers			√
Advice on recruitment of staff and personnel management			√
Pre-incubation services			√
Links to venture capital fund, business angel network			√

Table 17. Main Gaps in Service Provision by SE BIs

- Project management advice and assistance (supply – 71%, demand – 33%, excess – 38%);
- Help with exporting and/or partner search abroad (supply – 59%, demand – 27%, excess – 32%).

There are also services that are not available in the service portfolio of SE BIs, but are demanded by at least 20% of tenant companies and are worth considering of adding these services into service portfolio. The services include: links to higher education institutions; and, mentors, board members and other senior advisers.

6.4 Benchmarking of BIs services and recommendations on service portfolio*

A survey[73] conducted by the Center for Strategy & Evaluation Services (CSES) for the European Commissioning Enterprise DG, in 2002 evaluated the business support services of incubators in Europe, and their impact on business performance of their tenants. Whilst rather dated, it is still one of the most comprehensive surveys of its' kind, and gives indicative figures against which Serbian performance can be compared.

The questionnaires contained a similar list of 14 comparable pre-defined incubator services, offered in-house and through external services. In the EUBID project, this list has been expanded with services that support innovation and technology transfer.

Table 18 and Table 19 compare the findings of the incubator analysis in Serbia with the findings of the CSES research and the situation in the European incubators. Within these we present normalized BIs average responses, which sum to 100%, using a similar principle as in the CSES research.

[73] Benchmarking business incubators, European Commission Enterprise Directorate-General, 2002.

Supply – HT BIs	Serbian BIs average responses up to 100%		EU BIs average responses up to 100%	
	In-house	Via external sources	In-house	Via external sources
Pre-incubation services	10.00%	1.75%	11.70%	3.30%
Business planning and forming a company	10.91%	0.07%	11.00%	5.50%
Training to develop business skills	5.45%	10.53%	6.40%	10.30%
Accounting, legal and other related services	6.36%	8.77%	2.80%	12.50%
Market research, sales and marketing	5.45%	7.02%	5.50%	11.40%
Help with exporting and/or partner search abroad	5.45%	7.02%	5.00%	9.20%
Help with e-business and other aspects of ICT	1.82%	15.79%	6.90%	7.70%
Help with raising bank finance, grants, venture capital	4.55%	7.02%	12.10%	6.10%
Links to venture capital fund, business angel network	1.82%	3.51%	5.50%	7.00%
Advice on recruitment of staff and personnel management	7.27%	1.75%	5.70%	7.70%
Networking, e.g. with other entrepreneurs, customers	13.64%	0.00%	11.40%	5.30%
Intellectual property management	0.91%	3.51%	N.A.	N.A.
Advice and assistance on new product development	3.64%	7.02%	7.70%	7.70%
Advice and assistance in Manufacturing/Production Issues	0.91%	5.26%	N.A.	N.A.
Technology commercialization advice and assistance	0.91%	5.26%	N.A.	N.A.
Links to Higher Education institutions	10.00%	0.00%	N.A.	N.A.
Technology Transfer advice and assistance	3.64%	3.51%	N.A.	N.A.
Project Management advice and assistance	7.27%	3.51%	N.A.	N.A.
Mentors, board members and other senior advisers	0.00%	8.77%	6.80%	5.90%
Other services	0.00%	0.00%	1.40%	0.70%
Total services offered by all HT BIs	100%	100%		

Table 18. Comparison of BI service supply – Serbian HT BIs and European incubators

Eight services have similar supply trends, while different trends are marked for other services. These areas of difference are:

- Accounting, legal and other related services (EU incubators mainly outsource this service to an external service provider);
- Help with e-business and other aspects of ICT (small supply of HT BIs in-house services compared to external ones, while in EU incubators it is equally represented);
- Help with raising bank finance, grants, venture capital (almost three times more the supply of EU incubators for in-house service);
- Links to venture capital fund, business angel network (EU incubators provide tenants with venture capital and BA network, while in Serbia this service is underdeveloped);
- Advice and assistance on new product development (smaller HT BIs offer of in-house service);
- Mentors, board members and other senior advisers (HT BIs do not offer this in-house service at all, in comparison with EU incubators).

Supply – SE BIs	Serbian BIs average responses up to 100%		EU BIs average responses up to 100%	
	In-house	Via external sources	In-house	Via external sources
Pre-incubation services	10.61%	1.92%	11.70%	3.30%
Business planning and forming a company	9.72%	1.92%	11.00%	5.50%
Training to develop business skills	8.84%	7.67%	6.40%	10.30%
Accounting, legal and other related services	8.84%	0.07%	2.80%	12.50%
Market research, sales and marketing	7.07%	7.67%	5.50%	11.40%
Help with exporting and/or partner search abroad	8.84%	5.75%	5.00%	9.20%
Help with e-business and other aspects of ICT	5.30%	9.59%	6.90%	7.70%
Help with raising bank finance, grants, venture capital	3.54%	11.51%	12.10%	6.10%
Links to venture capital fund, business angel network	0.88%	5.75%	5.50%	7.00%
Advice on recruitment of staff and personnel management	9.72%	1.92%	5.70%	7.70%
Networking, e.g. with other entrepreneurs, customers	10.61%	1.92%	11.40%	5.30%
Intellectual property management	0.03%	5.75%	N.A.	N.A.
Advice and assistance on new product development	0.88%	15.34%	7.70%	7.70%
Advice and assistance in Manufacturing/Production Issues	0.03%	9.59%	N.A.	N.A.
Technology commercialization advice and assistance	0.03%	0.07%	N.A.	N.A.
Links to Higher Education institutions	0.03%	3.84%	N.A.	N.A.
Technology Transfer advice and assistance	3.54%	0.07%	N.A.	N.A.
Project Management advice and assistance	10.61%	0.07%	N.A.	N.A.
Mentors, board members and other senior advisers	0.88%	9.59%	6.80%	5.90%
Other services	0.00%	0.00%	1.40%	0.70%
Total services offered by all SE BIs	100.00%	100.00%		

Table 19. Comparison of BI service supply – Serbian SE BIs and European incubators

When it comes to SE BIs then the differences are noticed in the following services:

- Accounting, legal and other related services (this service is not outsourced at all in Serbia, unlike EU incubators);
- Help with raising bank finance, grants, venture capital (a small supply from SE BIs in-house services);
- Links to venture capital fund, business angel network (EU incubators provide tenants with venture capital and BA network, while in Serbia this service is underdeveloped);
- Advice and assistance on new product development (In Serbia this is mostly outsourced while in Europe it is equally offered in-house and outsourced);
- Mentors, board members and other senior advisers (very small supply of SE BIs in house services).

Demands – HT tenants	Individual (multiple) responses by tenants (up to 100%)		Ranking of received services	
	Receive (up to 100%)	Would like to receive (up to 100%)	RS ranking	EU ranking
Pre-incubation services	8.57%	1.82%	3	3
Business planning and forming a company	5.71%	2.73%	8	2
Training to develop business skills	8.57%	6.36%	4	4
Accounting, legal and other related services	10.00%	7.27%	2	
Market research, sales and marketing	2.86%	9.09%		
Help with exporting and/or partner search abroad	2.86%	4.55%		
Help with e-business and other aspects of ICT	0.00%	6.36%		
Help with raising bank finance, grants, venture capital	4.29%	8.18%		5
Links to venture capital fund, business angel network	7.14%	7.27%	7	1
Advice on recruitment of staff and personnel management	8.57%	4.55%	5	8
Networking, e.g. with other entrepreneurs, customers	12.86%	5.45%	1	
Intellectual property management	1.43%	2.73%		
Advice and assistance on new product development	4.29%	6.36%		6
Advice and assistance in Manufacturing/Production Issues	2.86%	2.73%		
Technology commercialization advice and assistance	2.86%	6.36%		
Links to Higher Education institutions	8.57%	2.73%	6	
Technology Transfer advice and assistance	1.43%	2.73%		
Project Management advice and assistance	2.86%	3.64%		
Mentors, board members and other senior advisers	4.29%	9.09%		
Other	0.00%	0.00%		7
Total services – receive/would like to receive by tenants	100.00%	100.00%		

Table 20. Comparison of HT BI tenant needs – ranking of used/needed services by Serbian and European tenants

Table 20 and Table 21 show the results of the service evaluation by the tenants. As previously, values are normalized, totalling up to 100%, for HT BIs and SE BIs. The results of the CSES survey show the ranking of services received by EU BIs tenants. For tenants in Serbia, the ranking of services was done according to how much they were used by incubator tenants.

Demands – SE tenants	Individual (multiple) responses by tenants (up to 100%)		Ranking of received services	
	Receive (up to 100%)	Would like to receive (up to 100%)	RS ranking	EU ranking
Pre-incubation services	3.66%	0.00%		3
Business planning and forming a company	3.66%	8.89%		2
Training to develop business skills	6.10%	6.67%	5	4
Accounting, legal and other related services	7.32%	6.67%	4	
Market research, sales and marketing	8.54%	11.11%	2	
Help with exporting and/or partner search abroad	3.66%	8.89%		
Help with e-business and other aspects of ICT	4.88%	11.11%		
Help with raising bank finance, grants, venture capital	6.10%	0.00%	6	5
Links to venture capital fund, business angel network	2.44%	0.00%		1
Advice on recruitment of staff and personnel management	7.32%	2.22%	3	8
Networking, e.g. with other entrepreneurs, customers	13.41%	6.67%	1	
Intellectual property management	2.44%	4.44%		
Advice and assistance on new product development	2.44%	4.44%		6
Advice and assistance in Manufacturing/Production Issues	1.22%	2.22%		
Technology commercialization advice and assistance	3.66%	2.22%		
Links to Higher Education institutions	4.88%	6.67%		
Technology Transfer advice and assistance	3.66%	0.00%		
Project Management advice and assistance	6.10%	11.11%	7	
Mentors, board members and other senior advisers	6.10%	6.67%	8	
Other services	2.44%	0.00%		7
TOTAL services received/would like to receive by tenants	100.00%	100.00%		

Table 21. Comparison of SE BI tenant needs – ranking of used/needed services by Serbian and European tenants

6.5 Proposals for the Service Portfolio Development

Finally, by looking at the data from both the business incubator managers and the incubator clients, we were able to identify areas where there is potential over supply of service, and areas where services need to be introduced or enhanced.

Based on this, we present for each type of business incubator a ranked list of ten key areas for further service enhancement that could form the basis of a structured service portfolio.

6.5.1 Proposals for the Service Portfolio Development of High-Tech Business Incubators

For HT BIs, the list combines services with the largest supply and demand gap as well as those that are demanded the most by the tenants of BIs and a new service – links to corporates – which based on current trends in business incubation in Europe, adds substantial value for BI clients.

6.5.2 Proposals for the Service Portfolio Development of Self Employment Business Incubators

For SE BIs, the situation is rather complicated as SE BIs do have most of the important services in their portfolio to assist businesses in their growth. However, the utilization of these services by BI tenants is inadequate.

Therefore, we recommend keeping most of the services available and putting more efforts on promotion of business incubation services among existing and potential clients, building staff capacity in delivery of these services as well as on selection of tenants who are in need of soft services – consultations, instead of simply using the facilities.

Additionally, based on this assessment, peer review recommendations, outcomes from tenants' questionnaires and experts' insights, we identify the top ten services that could complement existing service portfolio of SE BIs. The list combines services that are in balance in terms of supply and demand, services that are inseparable from any business incubation ecosystem and those that could add substantial value to BI clients especially those engaged in manufacturing:

1.	Mentors, board members and other senior advisors	Largest gaps
2.	Technology commercialization advice and assistance	
3.	Help with e-business and other aspects of ICT	
4.	Links to venture capital fund, business angel network	
5.	Market research, sales and marketing	
6.	Advice and assistance on new product development	
7.	Pre-incubation	Underpromoted services
8.	Networking, e.g. with other entrepreneurs, customers	
9.	Links to higher education institutions	
10.	Links to corporates	New services

Table 22. Proposals for Top 10 services to be included in service portfolio of HT BIs

ICT Hub

1.	Help with e-business and other aspects of ICT	Underpromoted services
2.	Help with exporting and/or partner search abroad	
3.	Business planning and forming a company	
4.	Project management advice and assistance	
5.	Market research, sales and marketing	Inseparable and new services
6.	Mentors, board members and other senior advisors	
7.	Links to higher education institutions	
8.	Networking, e.g. with other entrepreneurs, customers	
9.	Pre-incubation	
10.	Links to corporates	

Table 23. Proposals for Top 10 services to be included in service portfolio of SE BIs

7 BI Roadmaps and Identified Suggestions for Upgrading BIs

As reported earlier, through the Peer Review process, Roadmaps were prepared for twenty business incubators. These were developed through joint work between project experts, and the management teams of the business incubators, with additional input from tenants of the business incubators. In this chapter we report on the main conclusions from analysis of all of the Roadmaps. We also provide a summary of some of the innovative ideas proposed by the business incubators for improving business incubator effectiveness and efficiency.

7.1 Main Conclusions from the Roadmaps

7.1.1 Dynamic tendencies in the Serbian BI sector

Generally speaking, the positive impression is that all of the visited and assessed incubation-type business support institutions are in different stages development. Simply put, they are all in one way or the other looking for new strategic development paths. They all say they need a long-term strategy and plan.

This is a very positive feature as those, seemingly less advanced institutions, are trying to find strategies and ways to catch up, while others, seemingly more advanced in the local context, are trying to find ways to transform into more sophisticated providers of the advanced-level and more complex business support services.

Despite the widely-recognized theory of the stages in the development of BIs (see Figure 4. Current Standing of Serbia in a Phased Development of Business Incubation) we described earlier in the report, which promotes that the first-generation incubators as being concerned with the rental of spaces for the tenants, the second-stage incubators offering fine-tuned professional business support services, and the third-stage incubators becoming the very well connected hubs in regional, national and global business networks, this doesn't happen straightforwardly like this in most real situations. In practice most incubators comprise a strategically grounded mix of all 3 elements. In Serbia, though, the impression is that the majority of BIs at present are mostly middling somewhere between the first and the second stages of the BI development, with the best ones moving towards the third, and with many renovated spaces are still unfilled with tenants, alongside waiting lists of potential tenants that are nearly non-existent.

On the other hand, the managers of the BIs indicated that they do provide basic business management services and consultancy to their tenants, though the interviews with the tenants have indicated that many tenants wish for access to some specialized services that the BIs are not competent to provide at the moment. Many BI managers identify that in order to provide some specialized services they would need more well-trained staff members. This is not necessarily the best possible solution, however, as specialized services need state-of-the art practical knowledge on specific topics. In many instances this could be better provided by outsourced specialists from the private sector. None of the visited BIs has a proper business acceleration process, which now is a standard approach in many foreign BIs. This constrains their abilities to aimed at the acceleration

of the business development so that business ventures can grow rapidly and scale internationally to be ready to leave the BI in 3 to 5 years.

All the above indicate that this assessment process, and the subsequent support that can be provided for the BIs is very timely. It is understandable that most of the BI-type initiatives in Serbia had been designed and established based on the prevalent financial opportunities/ donor schemes at the given time. It is also a positive fact that because of the opportunistic behaviour of some regional government bodies and/or BI managers, the BI satellite organizations have been established as well. This is the main reason behind the variety of BI-type business support initiatives that have emerged like start-up spaces, open-spaces, business incubators, technology parks, science parks, etc. Very often in one specific vicinity one can find start-up spaces, co-working spaces, business incubators, dedicated/ specialized business incubators, technology parks, etc. Even though on the surface they all talk about supporting business establishment, business development, provision of business services, working-space/ office rental and the like, in essence those institutions should be designed differently, and marketed with specific focus, to provide different business support means at different stages of a business development.

All of these pre-incubation, incubation, and post-incubation institutions are needed for a sound business and entrepreneurship support eco-system to function on an institutional level, as each of them is meant to fulfil a very specific role in the business and entrepreneurship development path. Yet the specificity of how those institutions are interlinked in the creation of a smooth business support value chain remains misunderstood in many cases and thus not being used to its full potential by both, the BI management, and the regional government bodies as well.

Put simply, the new business venture undergoes changes in its development and its needs for support changes depending on the business development stage the new start-up is in; thus, the new company is supposed to move from one business support institution on to another as it grows.

The fresh/ fledgling company would typically start with an open-space type of arrangement and it would need mentoring and coaching, once its business model is proven with minimum viable product (MVP) being sold to first customers, it should then move into a business incubator where its growth needs to be accelerated with the business management acceleration programme and specialized consulting, then the company could move into the science/ technology park with specific infrastructure for production, logistics, etc., and if the company grows on an international scale as is in need of production facilities, it may move into an industrial park or a district.

One way or the other, the present BIs in Serbia will sooner or later move into the similar business support eco-system, which at present is not functioning to its full potential.

The whole sector of the BIs, thus, is at a stage where with some timely and relevant interventions into the business support eco-system on the macro- (national), mezzo- (municipal) and micro- (institutional) levels, the BIs could aspire to render more tangible inputs into the development of economy on the regional and national levels. This also seems to be a perfect timing for the development of national policies and programmes for the utilization of the potential for economic development rooted in the BIs and the capitalization on the nationally relevant BI support and advancement mechanisms, based on the emerging use of smart specialisation tools and approaches that will be guided by the new strategy.

7.1.2 BI sector as an element of the National Innovation System

It is clearly felt in the Serbian context that the BIs are elements of an overall - national and even global - entrepreneurship and business support eco-system. They are the means, not the ends in themselves, which means that the efficiency of their operation and contribution to the economic prosperity of the country is dependent upon the efficiency in the functioning of the whole business and entrepreneurship support eco-system. This is made up of multiple political, legal, institutional and organizational elements “glued up” by visionary and value-driven aspirations of the nation.

The National Innovation (eco)System is a strategic concept encompassing the subsystems of knowledge creation, knowledge dissemination/ transfer and knowledge application. The BIs and other forms of business support institutions belong in the subsystem of knowledge dissemination and transfer. Thus, for them to be functional, the subsystems of knowledge creation on the one hand, and the need for the knowledge in the market on the other hand have to be prevalent. The deficiencies of the knowledge creation subsystem and the insufficiently expressed need to apply knowledge in the market are clearly felt as large parts of a rationale for the existence of the *technology based* BIs. However, at present this system is not working as effectively

as it might. Simply put, if there is little advancement of the science, scientific research and motivation to apply scientific knowledge on the one side, and little need to solve business problems in the markets when applying scientific knowledge on the other side, the technology-based BIs find it difficult to attract technology-minded tenants. That is mainly the reason behind local technology-based BIs housing the tenant companies that can hardly be called technology-driven.

The National Innovation System (NIS) is policy driven with an aim of achieving advancements in national competitiveness on a global scale. The main political tools used in the design of the NIS are macroeconomic, legal-administrative, market demand enhancement, ICT infrastructure development, cultural/ value-oriented and related to the whole educational/ science system. The BIs can have multiple roles and inputs into the design and the functioning of the NIS. For example, the BI can enhance both, the science spin-offs from the universities and the creation of the market demand for higher-value-added business solutions through, for example, financial schemes that would be directed towards supporting the companies willing to operate on a relevant level of technology.

Needless to say, this would be possible only with the involvement of the national and local governments. The smooth functioning of the NIS as a whole has not been observed in the cases studied within the framework of the current project.

In this respect, if the BIs located in different regions of Serbia are struggling with some common problems (that have been identified during the peer review sessions), the primary focus for investigation should be the underlying conditions of the NIS, or broadly speaking, the national business and entrepreneurship support eco-system, the macro-level conditions. The macro-conditions are, namely, the legal framework for the establishment and the running of the BIs, the frameworks of financial support for the BIs and the companies located in the BIs, the laws on taxes and the laws on entrepreneurship (or the law on companies) and bankruptcy which are indicative of the ease of establishing and running businesses as well as the risks involved in being an entrepreneur, the efficiency of the functioning of the innovation development, scientific research and technology sub-system, the national policies in the areas of unemployment and social inclusiveness, to name but a few.

Thus, the acceleration of the development of the BIs primarily rests with the acceleration of the tenant start-up companies, which in turn is an outcome of the sound NIS policy. In order the whole of the business and entrepreneurship support system functions efficiently, the underlying national conditions, the regional government involvement, and the managerial capabilities of the top management at the BIs have to be fine-tuned and well-orchestrated.

7.1.3 Role of the regional/ municipal governments in the development of the BI sector

One more important element of the whole BI efficiency scene is the involvement of the regional and municipal governments as key stakeholders and beneficiaries of the business incubation activities. The involvement of key stakeholders, especially those representing regional and municipal governance bodies, in the activities of the BIs as experienced during the peer review sessions was disappointing.

One of the core problems identified was the lack of understanding of the role the BIs could play in the promotion of business and entrepreneurship in the municipalities and the regions.

Despite the fact that regional, or even more often, the municipal governments are the sole founders of the BIs (co-working spaces, technology parks, etc.), their involvement in the running of the BIs they co-founded and in supporting their activities are at very different levels. In rather few cases were the municipal bodies represented properly at the peer-review sessions. Their participation on the management boards and in the management decision-making processes of the BIs were poorly documented, the regional/ town development strategies with the roles for the BIs in them were outdated, the financial support towards the running of the incubators was sporadic, and the key performance indicators (KPIs) for the activities of the incubators are rarely set and monitored.

BI Novi Sad

All of those elements are indicative of the fact that the BIs are rarely seen by local governments as viable tools for regional (national) economic development. Whether technology-based or self-employment-based, the BIs should be instruments in achieving relevant socio-economic goals in the regional contexts in which they are embedded.

The lack, therefore, of clearly stated visions and goals aimed at solving the *specific regional* problems and the lack of participatory involvement in the discussion of those problems at the peer review sessions in some instances is indicative of the *insufficient understanding and interest in using the BIs as viable tools in regional business and entrepreneurship encouragement.*

It has been a common complaint from the BI managers during the peer-review sessions that the entrepreneurial spirit in Serbia is rather low and this is one of the key reasons why many incubators are struggling to attract some startup tenants (the occupancy rates at most incubators is very low). Generally, BIs are considered to be essential in low entrepreneurial cultures as they can boost the wish of an individual to try out an entrepreneurial route, though such incentivizing needs additional efforts and promotion from the BI managers.

On the one hand, the BIs need to be active in business enhancement activities (like hackathons, boot-camps, business success and failure events, public presentations of business stories and cases, etc.) and thus make entrepreneurship a “cool” activity. On the other hand, the BIs need to be outgoing, that is, more active in society by promoting business incubation services at schools, universities, communities, etc. Entrepreneurial risk-taking culture takes time to be developed and the BIs can play an essential role in this.

It would be beneficial for the municipal/ regional governments to rethink the role the BIs could play in the design and the implementation of the regional/ municipal development strategies.

7.1.4 BI management competencies

As the major part of the underlying business and entrepreneurship support eco-system elements are equally applicable in all regions of the country, and the specific regional regulatory sub-systems are not very different at large, the major difference in the success of the BIs visited rests with the *involvement* of the key stake-holders in the activities of the incubators and the differences in the BI *management capabilities*. As some of the visited BIs have proved, the managers of the BIs can do a lot despite the unfavourable underlying conditions and uninvolved stakeholders.

Given the underlying innovation/ business preconditions of the whole national business and entrepreneurship eco-system, and besides the non/ active involvement of the regional and municipal beneficiaries, as discussed above, the third factor of core importance in the efficient functioning of the BIs is the management capabilities in running the BI activities. Simply put, the managerial competencies of the BI directors and/ or managers need to be stronger.

The management of the BI is a separate issue in itself. The peer review process indicated two predominant types of BI top managers: *the politically engaged bureaucratic nominative or part-time multitasker.* The first type of a manager lacks deeper knowledge of incubation processes and incubation (or business) management competencies, whilst the latter lacks focus, devotion and involvement which is necessary to make the BI progress along all activity lines with a bigger pro-active power.

Separate analysis would need to be undertaken to be able to indicate specific gaps in the competencies of the BI managers, but based on the data collected during the peer-review sessions, the management of the technology-based incubators should give more attention to the development of the competencies in:

- The creation of a system of attracting serious high-tech companies (includes the involvement of Universities, scientific research institutions and private company labs);
- The design and the facilitation of provision of a well-structured business incubation system including pre-incubation, incubation, and post-incubation services;
- The development of structured programmes of business incubation and acceleration instead of the provision of sporadic training seminars;
- The recognition of the needs for, and the attraction of suppliers of specialized services (IRP, IPO, CRM, R&D, Lean, Design Thinking, MVP development, etc.), which can only be possible through co-operation with the service providers from the private sector.

As far as employment-based BI managers are regarded, the competencies that could be improved are:

- The overall managerial skills to improve management capacity, as most of the BI managers come from the public sector organizations;
- The development of a sound, well-structured portfolio of services for the promotion of tenant businesses;
- The ability to provide dedicated mentoring and coaching services to the tenants (this is extremely important for the self-employed entrepreneurs);
- The skills in the design of the programmes for social inclusion of minorities and the underrepresented;
- The skills in entrepreneurial community building (including PR, networking and social events' promotion).

It was often observed during the peer-review visits that the managers of the BIs expected the municipal or regional governments to show more support , whilst they themselves were less prone to take some pro-active measures in either enhancing the local governments to contribute, or in the search of alternative financial and other types of support from alternative sources than the local government.

The bottom–up rather than the top-down approach in solving the urgent BI management issues should also be enhanced among the managers of the BIs. The latter suggestion is also closely linked to the responsibilities and the accountability of the BI managers and the KPIs applied in the evaluation of the BIs success.

Even though most of the BI managers expressed the need for the BI to employ more people (for example, to provide the needed services for the tenants, to write project proposals for national and international donor programmes, to manage some activities (mostly marketing-type) for the BI, etc.), the BIs should remain flexible in how they are staffed and how they obtain the specialized services, thus the development of networks of specialized service providers might frequently be a better solution to full-time staffing of the BI.

7.1.5 Technology- vs. services-based BIs

The peer review process did not indicate *significant* differences between the technology-based and the employment-based BIs. Some technology-oriented BIs are only starting to move along the chosen path, but both the understanding of the specificity of the technology-based BIs, as well the lack of the needed competencies in the provision of professional services, and a lack of national financial support schemes are constraining a more rapid development.

Also, the profile of the tenants at the technology based BIs shows that the question of technological potential in local universities, science/ research laboratories and private R&D companies still needs to be examined. As mentioned above, the technology-based BIs cannot be analysed without the overall NIS context, as the BIs are mostly the mediators between the sub-systems of knowledge creation (universities, research labs, scientific achievements in the country, etc.) and knowledge application (businesses in the need of advanced-level problem solutions and the absorption of the markets). So far, most of the peer-reviewed BIs intend to specialize in the support to "IT-based business" without even having the relevant infrastructure (like the fast internet, dedicated server capacities, and the like). A more advanced technology-based BI would need to be specialized as it would consider providing its tenants the needed infrastructure like specialized laboratories, testing devices, prototyping facilities and the like, depending on the technologies the BI would specialize in.

The technology-based BIs should have close links with the university or universities which has been the case in the peer-reviewed incubators, yet the profile of the incubated businesses was not always indicative of the specific scientific achievements of the university they were affiliated with. A true relationship would signal of the specific know-how developed at the university and commercialized in the BI as a spin-off.

On the other hand, the self-employment BIs generally lack needed and dedicated support from local governments, the skills in mentoring and coaching of the tenants, and most importantly, the energy needed to invoke the vibrant entrepreneurial spirit and active networking in the communities that are dealing with serious and long-standing macro-economic and cultural challenges. In some advanced instances the employment based BIs would also benefit from specialization, as it is needed to provide physical support like shops, labs, warehousing, infrastructure, etc. The specialized employment BIs would be mostly needed in the regions suffering from systemic challenges like those, related to huge unemployment related to the close down of a regionally significant industrial companies, thus making redundant huge numbers of specialized and/or skilled labour force, for example.

The discussion of what is best, the versatile, or the specialized incubator, should be supported with regionally relevant data, as business support institutions like BIs are primarily meant to be embedded in regional contexts, that is, they are primarily supposed to take part in solving regional problems. On the other hand, specialized incubators provide additional value to the tenants by allowing the coopetition effect (co-operation and competition taking place simultaneously) to take its full effect. Coopetition can stimulate the development of higher value-added innovative businesses and products.

Ideally, if the technology-based BIs are primarily intended for the commercialization of scientific know-how and development of solutions to market problems by applying advanced technologies, the self-employment or employment-based BIs should be intended to solve the regional, and thus specific, employment challenges. For this to work, the regional/ municipal bodies should be actively involved in the analysis of the specific regional economic, industrial, business and cultural preconditions and challenges and should develop strategies for the interference. Through this the BIs can become the instruments and tools in dealing with the specific (un)employment challenges in the town or the region. Most peer-review sessions did not show currently existing close co-operation of the local governments and the BIs.

7.1.6 Leveraging the asymmetries in financial risk taking

Most of the BI managers of the more advanced incubators point at the lack of financial support for the development of the tenant companies, and this issue indicates the important asymmetry in financial risk taking between the State (with public money) and the private entrepreneurs.

Besides the factors like reluctance to be an entrepreneur, legal hurdles in establishing and closing down business, and the like, the next most important factor in business start-up enhancement is the understanding that business development needs to be supported with investment. If all the financial risks associated with business establishment, running and growth rest with the entrepreneur/ the founder and the public (State-owned) money is not involved, we have an asymmetry in financial risk taking. One of the key roles the BI could take is to leverage this asymmetry with the use of the public money, thus making business enterprising a less risky undertaking.

The private money available in the forms of venture capital, angel funds and the like does not solve this asymmetry effectively as they provide "quick money" aimed at quick and profitable payback. In order for innovation, technology commercialization and entrepreneurship to flourish, there should be an understanding that some public money for investment should be available.

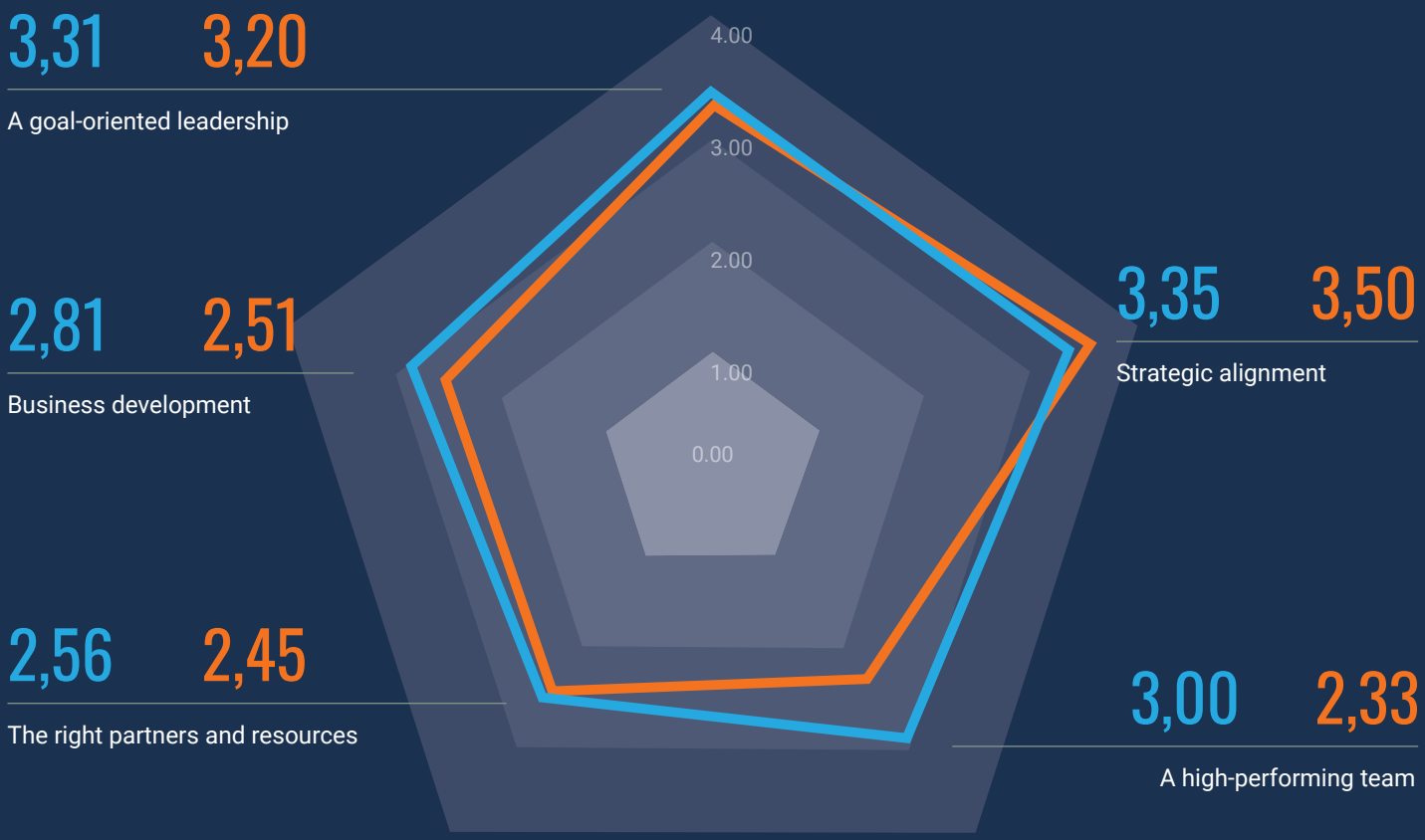
The importance of the State in funding innovation and start-ups in general is indisputable. Transparent policy on what are the national priorities in start-up business support and how subsidies and government investments need be allocated is very important. Financial schemes to support the growth of the problem-solving start-up business should be offered by the State.

As mention above, the NIS is important as an underlying system for the development of new businesses, especially in the technology areas, but it is not sufficient to have the components of the NIS. What is more important, is how those components interact between themselves (how knowledge creation institutions "feed" the knowledge dissemination/ transfer institutions, and those in turn, supply the knowledge application-greedy business markets). It should be emphasized that the availability of public money (through different business support schemes) in all of the interactions within the NIS elements is always a very big motivator and energizer of the knowledge flows and thus the basis of a sound business incubation process.

7.1.7 Balancing the private and the public

The peer-review sessions have showed the mixed understanding and inconsistent attitude towards the use of private-public co-operation potential. The private initiatives and actors in the BI sector are valuable additions to the overall eco-system of the business and entrepreneurship support, and they help filling in gaps in the system, yet their short-term goals and quick financial exit schemes should not be relied on as efficient ways of, for example, financing the start-ups with some growth potential.

On the other hand, the efficiency of the private sector in the provision of services in the areas of specialized training, mentoring, coaching and business networking is important, yet the contents, the outcomes of such cooperation as well as the ways of making it work need to be further addressed.



Average Scores for HT BIs Across Five Strategic Development Categories

Average Scores for SE BIs Across Five Strategic Development Categories

Figure 35. Average Scores for BIs Across Five Strategic Development Criteria

A better representation of private sector stakeholders on the BI boards and more tangible involvement of a wider stake-holder spectrum in the decision-making processes at the BIs would improve the BI management and would align the BIs with the market/ regional needs undoubtedly.

Though such involvement is, primarily, related to the legal regulation of BIs. The variety of legal forms of the BIs (from private, to public, to associations) is indicative of the need for the revision of the legal framing of the BIs' activities as in some cases besides management inefficiencies this translates into the inability of the BIs to apply for funding of some donor programmes.

7.1.8 BI networking and clustering

Despite some weakness at the level of underlying national preconditions in the overall business and entrepreneurship support eco-system, the managers of the present BIs can also achieve a lot by using their energy and creativity. The peer review process identified some good potential in the advancement of the national BI sector among the BI managers, and the need to engage in the peer-review type of activities on a regular basis was also expressed. The peer-review process also indicated the value of critical engagement in the BI evaluation and proved that peers could provide valuable insights, whilst learning from the process themselves. The peer-evaluation process can be seen as a valuable contribution to meeting needs of the professional BI managers.

Some of the peer-reviewed incubators were co-operating with nearby or related BI initiatives, though this could be enhanced through regional business support clusters linked to the local ecosystems, that would allow more efficient distribution of public money in the support of regional and inter-regional co-operation.

None of the peer reviewed BIs was housing a foreign capital start-up, and none was involved in an international exchange or development programmes with any of the foreign counterparts (the short-term visits to foreign BIs are not considered an involvement in the international networks). The further internationalization, via inclusion in international networks of BIs and BI programmes, should therefore be seriously considered.

Being a part of an international network would not only facilitate the exchange of experience and know-how in the BI management, but would also boost the motivation of local start-ups.

The peer review process showed the value in exchange of ideas and experiences among peers and the need to co-operate and discuss urgent problems in the BI management field among peers, thus the initiative should be continued by some BI networking and lobby institution, like the National Association of Science Parks and Business Incubators. An institution like that could not only promote the BI sector on a national level and provide the so needed lobbying, but it would also facilitate learning and would strengthen the potential of Serbian BIs in international projects aimed at BI sector development.

7.2 Ideas for Improving Business Incubator Effectiveness and Efficiency

Whilst the Roadmaps that were developed jointly are not included in this aggregated report, to protect privacy of information provided, we have summarized some of the specific key recommendations for BI development that were developed and discussed jointly with the 20 BIs taking part in the Peer Assessment process.

It should be noted that these are aggregates across all BIs, and individual BIs will need to develop their own service portfolio based on the specific recommendations of Roadmaps that were jointly developed with the project experts. The BI performance assessment method that the project has developed also permit any additional new business incubators not yet included to also benchmark their performance against the indicators we have presented, and use a simple questionnaire to identify key areas for further development. This also provides a basis for measuring performance over time.

Through the Peer Reviews, and the Roadmaps that were produced, we can identify an average current development profile of business incubators in five key areas: goal-oriented leadership; strategic alignment; high performing teams; appropriate resources and partners; and business development.

For HT BIs, the average score out of a maximum of 4 for each dimension is shown below. This indicates a need for further focus on all areas, with specific focus on strengthening partnerships and resources, and upgrading business development support services.

The profile for SE BIs is slightly different, with lower scores on four out of five of the dimensions. The three main areas for SE BIs to concentrate on are: strengthening the team; improving partnerships and resources; and upgrading business development support services.

Identifying what needs to be improved is important, but is only a starting point. To further encourage discussion and planning of specific improvements that can be implemented through the support of the EUBID project, we summarise here most interesting and useful suggestions for BI improvements made by the business incubators into 10 groups:

These ideas can form the basis for further detailed discussion and planning with individual business incubators, through the support that will be delivered by the EUBID project. Different business incubators will need to implement different solutions. The important point is to recognise what solutions will work best for each business incubator. The ideas proposed can help to develop realistic ambitions for further development of business incubators.

1. Develop clear vision, measurable goals and Key performance Indicators (KPIs) together with founders and other stakeholders.
2. Position BIs as catalysts of entrepreneurial culture development in the region.
3. Establish mechanisms for better coordination and support with other BI initiatives in Serbia.
4. Develop business structured incubation programmes to help companies grow, and focus on improving the conversion rate of start-ups into incubated companies and helping companies to grow rather than on providing premises.
5. Increase visibility on a local and national levels and promote BI achievements and successes more widely, publicising services and benefits offered to startups and potential startups by upgrading websites, better use of social media campaigns, use of newsletters, and posting videos and stories of success cases etc.
6. Improve processes of measuring levels of client satisfaction as the basis for market research to identify improvements and new service offerings.
7. Focus on developing deep partnerships and closer cooperation with a limited number of the best BIs in the world.
8. Build mentor networks that can improve the quality of the services and allow for the provision of more state-of-the-art training programs.
9. Make BI premises available for longer than currently with a series of non-stop events that promote visibility through more/ new programs, events, and encourage a „lively is attractive“ approach towards young, wouldbe entrepreneurs.
10. Become the most important hub for accessing all possible business support initiatives in the region.

8 Conclusions and Recommendations for Further Improvement at the Level of the BIs Ecosystem in the Republic of Serbia

The chapter summarizes the observations by project technical assistance team, national and international experts from the Study results into overall main conclusions, recommendations for policy makers and business incubators as well as proposals for service portfolio development.

8.1 Main Conclusions

- The number of operational business incubator initiatives has increased in the past few years to 40 in 2019, from only 5 in 2006;
- The role of business incubators as viable tools in the promotion of business, innovation and entrepreneurship is not yet adequately recognized, visible and supported on national, regional and local level;
- There is insufficient cooperation between relevant local and national stakeholders, and a need for both national and local governments to work actively with business incubators;
- Business incubators need to improve and standardise services they provide to clients and tenants and develop capacities of management and staff in order to move to the next phase of BI development (from co-working and property-based to adding high-value services);
- More intensive awareness raising actions are required to address a lack of understanding of the role the BIs could play in the promotion of business and entrepreneurship in the municipalities and the regions;
- Government support programmes are required to increase interest in using the BIs as viable tools in regional business and entrepreneurship encouragement;
- Effective performance management and monitoring system on the level of individual BIs and the level of BI ecosystem is needed in order to provide continuous improvement of BI operations.

8.2 Core Recommendations

8.2.1 Recommendations for Policy Makers

1. Municipal/regional governments should rethink the role the BIs could play in the design and the implementation of the regional/municipal development strategies;

2. National Government should examine feasibility of introducing a national programme for business incubator support

3. Positioning of BIs within the wider ecosystem should take place within the context of the new smart specialisation strategy.

8.2.2 Recommendations for High-Tech Business Incubators

Management of the technology-based incubators should give more attention to the development of the competencies in:

- Designing and developing the structured incubation programme with the portfolio of services proposed in section 6.5.1. and which is based on what HT BIs provide as well as what clients and tenants have identified as needing further improvement;
- Upgrading of the service portfolio to pay much greater attention to the needs of startups headed towards growth, scale-up and exit;
- Developing managerial skills to improve management capacity and improving staff competencies in order to provide relevant BI services;
- Creating improved technology transfer systems for attracting serious high-tech companies (including involvement of Universities, scientific research institutions and private company labs);
- Delivering services covering all stages of business incubation process, including pre-incubation, incubation, and post-incubation services;
- Developing networks of external suppliers of specialized services (IRP, IPO, CRM, R&D, Lean, Design Thinking, MVP development, etc.) which can only be possible through co-operation with the service providers from the private sector;
- Strengthening linkages with national and international business incubators and networks to facilitate the exchange of experience and know-how in BI management;
- Putting in place proper performance management and monitoring system to effectively monitor performance and identify areas for improvement.

8.2.3 Recommendations for Self-Employment Business Incubators

For self-employment BIs, improvements in skills, competencies and ability to effectively deliver services should be made through:

- Development or upgrading of a structured incubation programme with the portfolio of services proposed in section 6.5.2 and which is based on what SE BIs provide as well as what clients and tenants have identified as needing further improvement;
- Greater focus on improving managerial skills to improve management capacity, since most of the BI managers come from public sector organizations as well as improving staff competencies in order to provide relevant BI services;
- Upgrading mentoring and coaching services to the tenants (this is extremely important for the self-employed entrepreneurs);
- Positioning of SE BIs focus within the context of support for social inclusion (women, youth, unemployed, minorities);
- Upgrading skills in entrepreneurial promotion in local communities among women, youth, unemployed, minorities ;
- Strengthening linkages with national and international business incubators and networks to facilitate the exchange of experience and know-how in BI management;
- Putting in place proper performance management and monitoring system to effectively monitor performance and identify areas for improvement.

9 Toolkits and Roadmaps

In addition to the Study, four stand-alone components have been developed in order to support daily operations of BIs. Three of these provide toolkits for the business incubators, covering the following areas:

- Toolkit 1: Methodology for establishing and improving the process of selection of BIs tenants;
- Toolkit 2: Methodology for measuring effectiveness and efficiency of BIs in Serbia; and
- Toolkit 3: Methodology for carrying out Peer Reviews of BIs

The fourth component has a restricted audience, and is available in electronic form only. This is the set of Roadmaps for the twenty business incubators that participated in the peer review process.

A brief summary of the components is provided below.

Toolkit 1

Methodology for establishing and improving the process of selection of BIs tenants

This toolkit presents a strategic and well-structured approach to develop and implement a Tenant Selection Process.

The Toolkit provides guidance on:

- Main factors that need to be assessed to ensure relevance and fit between the candidate to become a BI tenant, and the focus and services of the business incubator;
- Guideline questions to assess: a) the business idea; b) the entrepreneur and/or management team proposing the idea; and c) motivation of the entrepreneur to benefit from the services of the business incubator;
- Key stages in an effective selection process;
- How to implement a systematic selection process; and
- Key differences in selection between high-tech and self-employment business incubators.

Toolkit 2

Methodology for measuring effectiveness and efficiency of BIs in Serbia

This Toolkit provides Serbian business incubator managers with the main methods and tools needed to develop an effective performance management system.

This Toolkit should help the business incubator management team:

- Understand the purpose and added value of using systems for effective monitoring and evaluation of the performance of the incubator;
- Identify and define the most appropriate set of relevant and measurable performance indicators;
- Develop practical methods for monitoring and evaluating business incubator performance;
- Determine the best ways to collect data needed to put in place an effective system for performance monitoring; and
- Understand how to use the data collected through monitoring and evaluation (M&E) activities, as part of a management information system for improving the operations of the business incubator.

Toolkit 3

Methodology for carrying out Peer Reviews of BIs

This toolkit provides a user guide describing how to conduct Peer Review assessment process of BIs. Peer review methods are deployed to maintain standards of quality, improve performance and provide credibility. The toolkit outlines objectives and main benefits of the process as well as who are the participants and what are their roles in the process. It explains how the Peer Review process can be used to:

- Increase and improve the management capacity;
- Contribute to interconnected organisations with strengthened performance, leading to more optimal utilization of resources;
- Develop a more even and professional level of operation that will enhance the ability to manage infrastructure efficiently and to deliver results;
- Contribute to improvement of governance structures and organisational set-up; and
- Improve networking of BI initiatives.

Roadmaps

The audience for these is restricted. The full set is distributed in confidence to the Ministry of Economy, whilst the individual Roadmaps have been distributed to the business incubator that took part.

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