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SKILLS+
ACTION PLAN FOR BULGARIA

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Part I General information

Project: Supporting Knowledge Capacity in ICT among SME to Engage in Growth and Innovation (SKILLS+)

Partner organisation: Bulgarian Chamber of Commerce and Industry (BCCI)

Other partner organisations involved (if relevant): Bulgarian Small and Medium Enterprises Promotion Agency

Country: Bulgaria

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Part II – Policy context

The Action Plan aims to impact:	□Investment for Growth and Jobs programme
programme	□European Territorial Cooperation
instrument	□**Other regional development policy**

Name of the policy instrument addressed: Policy implemented through Operational programme "Innovations and Competitiveness" Priority Axis 2: Entrepreneurship and Capacity for growth of SMEs.

Small and Medium Enterprises (SMEs) are the main target group of the OPIC 2014-2020. The Programme's strategy, as a part of the implementation of the EU structural and investment funds (ESIF) in Bulgaria, is closely related to the Investment for growth and jobs goal and Bulgaria ‘s contribution to "Europe 2020" targets.

OPIC 2014-2020 aims at addressing the needs, overcoming the challenges, and seizing the opportunities for development of Bulgarian economy. This will be done by engaging in smart growth (under priority axes 1, 2) and sustainable growth (under priority axes 3, 4). The Programme also aims at achieving a complementary effect in terms of inclusive growth. Only priority axes 1 and 3 are allowed for large enterprises, while most of the Programme's support targets SMEs.

Part III – Details of the actions envisaged

ACTION 1 Provision of ICT vouchers for SMEs

1. **The background (please describe the lessons learnt from the project that constitute the basis for the development of the Action plan)**

The lessons learnt from identified SKILLS+ good practices that influenced the introduction of the ICT vouchers are the following:

- ***InnoChambers, Spain***

InnoChambers is a programme that encourages the culture of innovation in business management to achieve sustained growth and improve competitiveness among small and medium enterprises. InnoChambers is an initiative of the Chamber of Spain but it is developed by the Chambers of Commerce at the regional level, with financial support from the European Regional Development Fund (ERDF), the Chambers of Commerce itself and Public Administrations. It is characterized by its orientation towards the specific needs of small and medium Spanish enterprises through the development of a mixed methodology: an initial diagnosis and support in the innovation implementation.

The Chamber has helped 151 SMEs through a diagnostic of innovation in their companies and 108 companies through innovation implementation. Participating companies come from multiple sectors and have different sizes and activities but all of them belong to rural areas of Valladolid. Within the programme there are companies that have implemented e-commerce, management applications (CRM, ERP ...), creation of web pages to improve the visibility of the company and marketing their products or a social media plan that allows them to connect with virtual clients faster and more efficiently.

Transfer of good practices in Bulgaria – Development of a methodology for profound diagnostic and identification of specific needs of Bulgarian companies, with a focus on rural areas SMEs. Support for the innovation transformation of companies through provisioning of ICT vouchers for providing different type of services, such as creation of web pages, online promotion and marketing of products and services, e-commerce applications development, inclusion of companies' profiles in online catalogues and registries to enable cross border partner finding, etc. This practice can be transferred in order to promote innovation and to encourage the use of ICT-based solutions.

- ***E-leadership skills for SMEs – Latvia***

The project was aimed at raising productivity, innovations and increasing the long-term competitiveness of small and micro-enterprises by teaching them how to effectively apply ICT technologies and e-skills. Trainings were delivered by 16 modular programs in 3 training areas: 1. Strategy (ICT for innovation; Market analysis; Management of changes; Management of processes and products).
2.Technologies (Infrastructure; Security; Multimedia and graphical design; Office software)
3. Business processes (Client and partner management; Finance management, accounting; E-commerce.)

Transfer of good practices in Bulgaria organization of ICT and digital transformation-oriented trainings that could form part of the ICT vouchers provided to the companies. The training materials will be elaborated in cooperation with universities and ICT clusters and associations, in order to enable both theoretical and practical aspects of digital transformation. The trainings will be multidisciplinary, including technical aspects such as Infrastructure, Software as a Service, Data Management, Business Software (Enterprise Resource Planning and Client Relationship Management), Web applications, Innovation Management, etc. and will target the specific needs of the companies.

- ***E-business Competitiveness Improvement Project, Croatia***

The main objective of the E-business Competitiveness Improvement Project was to enhance the competitiveness of Croatian enterprises by increasing their e-business and e-commerce awareness and activities. The Project's activities were divided into two components and targeted both Business Support Centres and Small and Medium-sized Enterprises (SMEs). Component 1 focused on increasing the capacity of the 10 Business Support Centres (BSCs) located throughout Croatia, which have been selected to take part in the Project, while Component 2, the Business Support Centres, with the support of the Project consultants, raised SME awareness in their regions about e-business and delivered direct assistance on ICT and e-business to targeted SMEs.

Transfer of good practices in Bulgaria – provision of regional consultancy support for SMEs in the process of implementing ICT solutions for their businesses. Awareness rising about the benefits such solutions could bring and demonstration of how these SMEs could promote their products and services, collaborate and find partners and customers through advanced Web based solutions.

- ***Strategic Facilitation of SMEs Businesses of Saxony-Anhalt, Germany***

The strategic facilitation indicates the key aspects of the economic policy of Saxony-Anhalt. It identifies innovations, capital expenditures and internationalization as main requirements for growth and increasing of competitive ability of SMEs.

The initiative shall be elaborated and defined with the aid of roundtables and discussions on the strategic facilitations' key aspects by different actors such as chambers of industry and commerce, universities, companies e.g. ICT-applications which are indispensable prerequisites for the innovation and growth of SMEs.

Transfer of good practices in Bulgaria – involvement of all interested stakeholders in the process of preparation of strategies and implementation of measures leading to increased innovation capacity and growth of SMEs.

Action 1 will be implemented as a grant schemes for ICT vouchers within Operational Programme Innovation and Competitiveness, Priority Axis 2 Entrepreneurship and Capacity for growth of SMEs. The main objective of the scheme is to increase the capacity and competitiveness of SMEs providing vouchers for information and communication technologies. The scheme is aimed at facilitating access to digital know-how and technologies for SMEs by providing incentives to connect with service providers in the field of ICT. The aim is to encourage the use of new ICT-based business models and to step up the digitization of SMEs to contribute to the development of their business and increase of

the competitiveness. The scheme will be managed by the Bulgarian SME Promotion Agency, responsible policy organisation. Representatives of the Agency took participation in the organised by SKILLS+ capacity building seminars and peer reviews. They learned and applied elements from the studied best practices in the process of the development of the mentioned grant scheme.

Bulgaria is making progress in its overall economic and social development but negative trends still exist. This is the level of business development and business innovation. The reasons for these tendencies are related to the low technological readiness and the level of business development, infrastructure and innovation. Bulgaria has improved in the area of business upgrading and innovation, but it still remains far from being the best in the field of innovation and technological development. Different measures are planned to be implemented in this direction and some of them are the establishment of DIH and introduction of ICT vouchers.

2. Action (please list and describe the actions to be implemented)

Step 1: Performing a selection procedure for suppliers that have demonstrated capacity to provide at least one of the relevant ICT services

1.1 Announcement of a procedure for selection of ICT service providers for their inclusion in the voucher scheme for providing ICT services to SMEs

1.2 Evaluation of applications received from ICT service providers for inclusion in the list of voluntarily participating ICT service providers in the voucher scheme

1.3 Compilation of a list of voluntarily participating providers of ICT services

Step 2: Consultancy services for the implementation of the planned public procurement procedures and elaboration of all relevant documentation, including Guidelines for Applicants, Application Form, template of a contract between SME and ICT Service Providers, Project Implementation Guide etc.

2.1. Consultancy services for the implementation of the public procurements of the project

2.2. Consultancy services for elaboration of the documentation

Step 3: BSMEPA launches a procedure for collecting applications from SMEs applying for vouchers through submission of project proposals

3.1. Announcement of the call for application forms for vouchers for ICT services. The announcement will be available in the following web sites: on the Internet Pages of the Operational Programme "Innovation and Competitiveness" 2014-2020 www.opic.bg , the Single Information Portal www.eufunds.bg and the site of BSMEPA www.sme.government.bg

3.2 Application process for SME during the announced start of the call and deadline for submission. The application forms will be submitted on line.

Step 4: Evaluation and ranking of eligible project proposals received from SMEs

4.1. Assessment of received application forms

4.2. Ranking of the eligible project proposals submitted following the methodology developed for the voucher scheme

Step 5: Production and printing of vouchers for ICT services to be provided to the SMEs
5.1. Submission of request for printing of vouchers for ICT services
5.2 Production and printing of vouchers for ICT services by a specialized printing house

Step 6: Provision of proprietary vouchers for ICT services to SMEs
6.1 Performing a documentary check of the category of micro, small or medium enterprise declared by the applicant
6.2 Provision of the vouchers

The following vouchers will be provided to the SMEs:

Vouchers - Type 1: vouchers for web-based ICT services - platforms, web sites and / or mobile applications: Vouchers with a fixed nominal value 6 000 BGN, VAT included for the following ICT services:

- solutions and e-commerce platforms based on ICT business solutions;
- business/corporate web sites with adaptive design, accessible from both computers and mobile devices;
- business/corporate e-commerce web sites with adaptive design, accessible from both PCs and mobile devices, incl. web-design;
- simplified mobile/tablet applications for e-commerce and ICT business solutions

Vouchers - Type 2: vouchers for ICT services for digital marketing, process optimization and cyber security and information security: Vouchers with a fixed nominal value 24 000 BGN, VAT included for the following three types of ICT services:

- *Group 1: ICT Marketing Services for Digital Marketing*
  - Services based on VR technologies representing the company's activities and uploading to the Internet
  - Software development and implementation of VR technologies in the manufacturing sector
  - Issuing unique worldwide product recognition numbers for the company products (numbers to be recognized by all trade partners and chains and ensuring listing of merchandise and trading in merchant sites and electronic platforms)
  - Providing access to an electronic platform for product information entry, which then is synchronized with an electronic product information platform

- *Group 2: ICT services to optimize management, production and logistics processes*
  - Software solutions aimed at optimizing and tracking management processes
  - Software solutions aimed at optimizing and tracking production processes
  - Software solutions aimed at optimizing and tracking logistics processes

- *Group 3: ICT services for providing cyber and information security of the product and/or service and/or processes*
  - Providing cyber and information security of the products by applying blockchain technology and delivered ledger-technologies
  - Providing cyber and information security of the services by applying blockchain technology and delivered ledger-technologies

- Providing cyber and information security of the processes by applying blockchain technology and delivered ledger-technologies

Step 7: Monitoring and control over the provision of ICT services by the suppliers according to the rules for the implementation of the voucher scheme and verification of the activities and expenses carried out by the suppliers

7.1 Implement monitoring and control over the provision of ICT services by supplier companies

7.2 Verification of the activities and costs incurred by ICT service providers

7.3 Payments from BSMEPA to ICT service providers in connection to the provided service from the voucher

Step 8. Organizational and management activities, incl. project audit and information and communication activities

8.1 Providing a team of internal experts from BSMEPA for project management

8.2 Providing a team of external experts for evaluation, monitoring and verification of the voucher scheme

8.3 Audit

The challenges addressed by the measure are:

- Lack of awareness in SMEs of research, digitalisation and innovation,
- Low innovation capacity of SMEs in rural areas,
- Low competitiveness of SMEs because of low level of digitalization and ICT usage,
- Limited financing for technologies and innovation activities for enterprises,
- Low cooperation for innovation between enterprises and academia**.**

The expected impact is related to the following:

- at least 450 SMEs will receive ICT vouchers
- increased capacity of SMEs to develop competitive and sustainable business that corresponds to the dynamically developing markets through the use of ICT;
- increased innovation capacity of the SMEs in rural areas;
- increased competitiveness on the basis of ICT and innovations;
- improved business environment;
- increased level of digitalisation and ICT usage;
- improved cooperation for innovation between enterprises and academia;
- improved collaboration between research institutions and traditional businesses;
- improved cooperation among SMEs, institutions and clusters.

3. Players involved (please indicate the organisations in the region who are involved in the development and implementation of the action and explain their role

Bulgarian SME Promotion Agency is the responsible policy organisation that will lead, implement and monitor the ICT voucher grant scheme. The Agency is the main actor in the preparation of the call for proposals, evaluation of the applications of the companies, award of vouchers, monitoring of all implementation process.

Ministry of Economy is the managing authority of the Operational Programme Innovation and Competitiveness which source the financing will be provided from.

SMEs – they are the main beneficiaries from the implementation of the grant scheme for provision of ICT vouchers. As main indicator for the success of the scheme will be used the number of SMEs that received ICT vouchers.

BCCI is the linking unit between the SMEs and the policy responsible organisations. The Chamber will be actively involved in dissemination of information regarding the opening of the call for proposals, provision of advises for the successful preparation of application forms and smart use of provided ICT vouchers.

4. **Timeframe –** 2019/2020
- Preparation of documentation and requirements for the call for proposals 2018/2019
- Announcement of the call for proposals, collection of proposals from the SMEs, evaluation 2019
- Award of vouchers and implementation 2019/2020

5. **Costs –** 5 MLN EUR (tbc)

6. **Funding sources –** Operational Programme Innovation and Competitiveness (ERDF and state aid)

ACTION 2 Development of national/regional Digital Innovation Hubs (DIHs)

1. **The background (please describe the lessons learnt from the project that constitute the basis for the development of the Action plan)**

- ***IT cluster, Central Germany***

IT Cluster of Central Germany was established in 2009 by seven regionally-based IT companies. The IT cluster of Central Germany offers a platform for local IT companies enabling them to establish contact with one another and work more closely together**.** The association also aims at promoting a stronger regional IT sector and facilitation of the innovative and competitive ability of central German IT-companies by coordinating and showcasing their activities.

The IT Cluster offers different opportunities for knowledge sharing such as working classes, workshops, sector and general meetings. Besides, regarding to production and protection of potential qualified employees, the Cluster-members cooperate intensively with universities from central Germany.

Transfer of good practices in Bulgaria - Type of services for knowledge transfer offered to the SME, existing forms of cooperation with local Universities that could be used as Centres of Excellence in the process of establishment of DIH. Creating and sustaining regional ecosystem around the DIHs.

- ***Latvian IT cluster***

The Latvian IT Cluster (LITC) was established in 2000. LITC members specialize in software development, IT consultations, hardware architecture, networking & data transmission solutions, financial and business management solutions for enterprises and organizations, business analysis solutions, Enterprise Resource Planning solutions, finance management and accountancy solutions. The objective of LITC is to increase competitiveness and growth of IS and IT services export through promotion of collaboration between companies on the basis of the shared vision.

Transfer of good practices in Bulgaria – type of services for knowledge transfer and joint innovations collaboration that could be provided from the DIH to the local companies. Bridging the gap between the strong IT Bulgarian industry, having clients primarily from abroad and the low-tech SMEs from other industrial sectors.

- ***Innovative Zadar***, Croatian experience

Innovative Zadar ltd. was founded in 2003 by the City of Zadar. Initially called 'Business incubator', its main aim was to encourage the development of SMEs in the Zadar area. The initial idea was to provide businesses and technical services, as well as favorable office leases, as to facilitate the launch of new entrepreneurs. In the late 2014 the company began the process of business transformation. It changed it name in 'Innovative Zadar Ltd' and started with an additional range of activities mainly related to ICT technologies: the main idea was to become, in addition to supporting small and medium enterprises, a carrier of a coordinated and integrated development of ICT services and infrastructure for the local government. The positive effects of this approach should be a more efficient and transparent local government with the main aim to develop a large number of on-line services and local government services intended to be used by citizens, entrepreneurs and tourists.

Transfer of good practices in Bulgaria – range of activities offered to the SMEs related to ICT, existing successful cooperation between the cluster and local administration.

The ICT support and advice to SMEs is of great importance for regions with low entrepreneurial activity. Therefore, the existence of business incubators in these places is compulsory.

The second phase - the redevelopment within the innovative Zadar - allowed entrepreneurs to catch up on the upcoming globalization challenges thanks to the applied ICT solutions. This practice can be transferred in terms of good organizational model, implementation process, specific tools and innovative approaches to target stakeholders and marketing strategy.

2. **Action (please list and describe the actions to be implemented)**

The following actions (steps) should be implemented within the defined measure:

Step 1: Identification of and invitation to the stakeholders to be included in the preparation of the action

As the action is of multidisciplinary nature and foresees involvement for collaboration of different institutions and organizations representing government, business and academia, it

has to be ensured that all the different viewpoints are identified and taken into account when planning the action. The involvement of the right stakeholders from industry will guarantee from one side that the action is specifically targeted at their needs with focus on SMEs in the rural areas that has lower ICT skills and scarce resources to apply ICT solutions. From the other side, the academic institutions, will be the drivers of the DIH and as such they need to make the relevant structural and organizational changes to fit within the action scheme. Very important is the involvement of policy makers, to ensure that the action fits within the frame of the respective national programs and instruments. The role of business associations such as BCCI and also the ICT sector representatives will be of crucial importance as well, as mediators, but also as drivers of wide awareness rising campaign. The regional level aspect is also important, so the main regional players will be identified and invited to take part in the preparation of the measure.

Step 2: Create working groups of experts to specify the concrete parameters of the action.

Working groups of experts with relevant experience from the identified in step 1 government, industry and academia/research organizations will be created at regional level. Each working group should have a balanced representation to cover adequately all the requirements and views for a targeted DIH establishment and functioning. As DIHs should be specialized in an area defined as strategic for the concrete region in the Innovation Strategy for Smart Specialization (ISIS), the representation of industry through regional chambers of commerce and respective associations is of primary importance. On the other hand, as DIHs rely to a great extent on the scientific capacity of a research institution or a Centre of Excellence (CoE) also at regional level, respective scientists should be also a part of the working groups.

Step 3: Define digitalization needs in pilot sectors and regions and specify the concrete parameters/requirements of the action (create a comprehensive portfolio of services of the future DIHs)

Workshops will be organized with the aim to identify current gaps, to specify the needs for ICT solutions by the respective target groups and to analyze the expertise of the stakeholders in the ICT enabling technologies. Each target group will be also analyzed regarding its sectoral structure, size, formal and informal interfaces with other networks. As a result, the DIH specification will be mapped onto the social and industrial needs of the stakeholders at regional level. Other public forums could be also organized for analysis of the trends, case studies and direct exchange of experience between the stakeholders. The main goal of these activities will be to identify the specific needs of business and academia, as well as receiving feedback (suggestions, recommendations, opinions). As a result, the working groups formed in step 2 should elaborate a comprehensive specification of the action to be implemented and its concrete parameters.

Step 4: Include the action in the according programming period of Operational programme “Innovations and Competitiveness” and „Science and Education for Smart Growth “Operational Programme (OPSESG) and into the respective indicative work programmes.

The inclusion of the action in the respective program, instrument and programming period is responsibility of the government representatives, that have the right instruments to specify the concrete parameters of the procedure (based on the outcomes from the working groups findings and analysis from Step 3), such as eligible applicants, eligible actions, eligible costs, budget of the procedure, etc., to plan and to implement such measures. Furthermore, a synchronization between the two programmes should be considered, as CoEs are a central element of every DIH and the creation of such regional centres is planned to be funded under OPSESG, priority axis 2 and is part of 2019 work programme.

Step 5: Preparation of documentation and requirements for the call for proposals

The implementation of this step is also responsibility of the government representing organizations, but will consider to a great extend the outcomes from step 3. Example activities to be funded include (as defined by current DIHs in EU) but are not restricted to:

- Building new or expanding and upgrading existing research and development infrastructures according to the regional specialization under ISIS.
- Acquisition of research equipment, creation of testing laboratories and experimentation facilities, setting-up production equipment including technology lines and specialized software, platforms, etc. for common activities.
- Awareness rising, transfer and broad dissemination of knowledge and research results by applying the principles of open access to scientific information.
- Developing mobile and web applications providing for access and possibility for free participation in webinars, virtual conferences, etc.
- Performing surveys and analyzes of the needs of regional strategic industries and elaborating the according DIHs strategies. Applying working solutions (including foreign good practices).
- Supporting capacity building of the research and development teams of the research institutions (CoEs)
- Stimulating the internationalization and marketing of the hubs at national and EU level
- Building administrative and innovation management capacity
- Developing targeted training materials and organizing multidisciplinary courses for digital skills development in rural areas SMEs.

Step 6: Announcement of the call for proposals, collection of proposals, evaluation, award of contracts.

The official announcement will be made on the page of the respective program and instrument. This will not have the desired outreach and impact without the appropriate communication and dissemination campaign for awareness rising, that should be also supported by a broad range of stakeholders and especially the Bulgarian SME Promotion Agency and industry associations and chambers of commerce.

Step 7: Implementation

In order to be successful, the implementation of the call should consider some important principles applied in similar EU programmes such as:

- Consortia participating in the call should demonstrate that they are deeply rooted in the regional innovation ecosystems and will offer digital transformation services to companies in their proximity. They should provide a clear analysis how the proposed project (DIH) will add value to an already existing service offer, and how it is aligned with the national or regional digitisation of industry initiative.
- Every project (DIH) should support a critical mass of dedicated highly innovative experiments bringing together technology suppliers and users. A major part of the budget should directly benefit SMEs or slightly bigger companies.
- Activities should aim at long-term sustainability and include a business plan for the DIH, a plan to attract investors, to address training and skills development needs and dissemination. Established networks reaching out to SMEs like the Enterprise Europe Network should be used.
- DIHs are expected to be actively involved within a network of Digital Innovation Hubs, covering most regions in Europe that will help to maximise their impact and to share knowledge and reuse best practices.

Step 8: Impact analysis

After the first call an impact analysis should be made by the established working groups, in order to improve and position/modify the next calls.

In general Bulgaria's innovation system is operating below its potential, measured either by the system's inputs and outputs or by the contribution of innovation to economic growth. The low level of Research and Development spending, in particular by the enterprise sector, and especially by SMEs, the weak linkages between research and the needs of industry and the strong orientation of the Bulgarian research system towards the basic research, are key reasons for Bulgaria's comparatively poor record of innovation.

Commercialization of the results is a major weakness of the Bulgarian research system. There are only very limited frameworks for supporting collaboration between public research establishments, universities and the private sector. Sharing and support systems are insufficiently developed to facilitate knowledge transfer and the creation of university spinoffs and to attract (venture) capital and business angels. Public policies are not fostering enough long-term sustainable partnerships among innovation actors. The Chamber of Commerce and Industry issued official data showing that the Bulgarian enterprises are not prepared to either implement independently innovations (only 23% of entrepreneurs have expressed such readiness) or to assign the development of new products to universities or research organisations. This lack of cooperation and mutual trust between the research organizations and companies, along with the poor experience in commercializing of research results by both types of players, is one of the key reasons for the low innovation activity in Bulgaria (ranking last in the EU).

In summary the action is aiming to answer to the following challenges:

- lack of awareness in SMEs of research, digitalisation and innovation;
- lack of communication between the traditional business and the digital business;
- scarce of initiatives for Start Ups in the digital sector;
- low cooperation among SMEs, institutions and clusters.
- low collaboration between research institutions and traditional businesses,
- low cooperation between business and educational institutions,
- low cooperation for innovation between enterprises and academia**.**

The realization of regional Digital Innovation Hubs will provide a single solution to all of the above challenges. DIHs will help their customers to experiment and test digital innovations to better understand their opportunities and return on investments. They will also offer training and skills development, support to find investments, and give access to an ecosystem and networking opportunities. At the core of the DIH is normally a research & technology organisation or university lab working with other relevant organisations as a "one-stop shop".

DIHs should embrace a bidirectional knowledge transfer strategy. From one side the model of "active supply" will refer to commercial application of the knowledge, acquired by the DIH (CoEs) researchers through the rules for intellectual property, technological transfer and the so-called spin-off companies, while from the other, the model of "active demand" will refer to the cases, in which different organizations will receive support from the DIH researchers, because they have signed collaboration/partnership contracts.

Alignment with EU policies and objectives

In April 2016, the European Commission issued a communication outlining its strategy for allowing the European Union to fully seize the opportunities offered by digitisation across industrial and services sectors. Beyond the support to key technological areas, an essential aspect is to foster the uptake of digital technologies and innovations, as well as synergies with other key enabling technologies. This calls for projects implementing Digital Innovation Hubs, which provide easy access to the latest digital innovations and experimentation facilities to potential users, cut across technological boundaries and reinforce links between ICT and Societal Challenges, in order to digitise and transform European industry and services.

Digital Innovation Hubs are seen as a key component of the Digitising European Industry Initiative launched by the European Commission to reinforce the EU's competitiveness in digital technologies. The goal is to ensure that every business in Europe – no matter its size, location or sector has access to a Digital Innovation Hub at 'a working distance' and is able to benefit fully from digital innovation.

DIHs will help companies to become more competitive by improving their business/production processes, as well as products and services through digital technology. DIHs will offer services to test and experiment with advanced technologies, to manufacture innovative products or act as broker between user companies and technology suppliers.

The European Commission is investing €500 million from 2016 to 2020 in supporting a pan-European network of DIHs, with the aim of giving companies across the European Union easier access to the support they need, whether in terms of financial assistance, access to infrastructure, or skills and expertise.

Multiplying and synergic effect with national policies and programmes:

Bulgaria EU Presidency

The Bulgarian Presidency in the first half of year 2018 can also be seen as a great supporter of DIHs establishment, especially in the view that it focused especially on accelerating the process of completing a competitive and fair Digital Single Market and particularly on the development of a European data-based economy.

The Bulgarian Presidency placed the emphasis on the Digital Single Market as a source of growth and competitiveness based on a rapid penetration of information and communication technologies in all sectors of the economy. It is also acknowledged that the completion of the Digital Single Market in Europe undoubtedly requires also a big investment in research and innovation, such as for instance, cloud computing and big data, artificial intelligence, maximum use of data and research information. In this context, Bulgaria focuses on strategic areas where the potential of digital research infrastructure can be put to the best use, as well as on wide and free access to publications and data, including through the European Open Science Cloud and high-performance computing initiatives, such as EuroHPC. The implementation of regional DIHs will be a very important step towards achieving the presidency objectives.

Synergy with Science and Education for Smart Growth Operational Programme

The Science and Education for Smart Growth Operational Programme (OP SESG) is entrusted to the Ministry of Education and Science (MES) and its total budget amounts to BGN 1.37 billion. (European and national funding).

The first of the three main priority axes of the programme - "Research and Technological Development" has a budget of almost BGN 560 million from the European Regional Development Fund. Among the priorities set is the enhancement of the quality of research and the development of innovation. The national objective is to achieve sustainable growth in Bulgaria, and it requires targeted investment in priority science fields, specific for the country, skilled researchers and inventors and an attractive science environment.

In this respect the funding under this priority is targeted at development of Centres of Competence, Centres of Excellence (CoEs), Scientific Infrastructure, Development of regional smart specialization, International cooperation. A significant part of the funding under this priority is expected to be invested in the development of centres of excellence and centres of competence as hubs of high-quality research and innovation in the areas defined in the ISIS.

These centres are expected to become the cores of the future regional DIHs. They will provide competences in Digital Technologies, access to infrastructure and technology platforms, digitisation and application expertise, will support experimentation in real-life environments, fabrication of new products, will demonstrate best practices and will showcase technologies in pilot factories, fab-labs. Leveraging the CoEs the DIHs will go one step beyond and will provide services to industry, access to competence centres, development of innovation ecosystem, brokerage, access to finance, market intelligence, training and education, incubator/mentoring services, etc.

Innovation Strategy for Smart Specialisation of Bulgaria

The Innovation Strategy for Smart Specialisation (ISIS) presents a comprehensive analysis of the research and innovation capabilities in the economy and in the field of science. It provides a selection of priority areas for enhancement of the competitiveness of the Bulgarian RDI system. The ISIS is based on the concept of a broader understanding of innovation going beyond investment only in research or only in the manufacturing sector; it is also based on building competitiveness through design and creative industries, innovation in the social sector and services, new business models and innovation based on practice.

ISIS outlines high priority areas for action to achieve smart, sustainable and inclusive digital growth in the 2014-2020 period to provide balanced support for ICT supply and demand. In this sense, the DIH concept fully supports ISIS objective for "Stimulating the widespread use of ICT by enterprises, especially SMEs, citizens and the public sector, to tackle major economic and social challenges."

Industry 4.0 Concept

The Ministry of Economy has elaborated a strategy „Concept of Digital Transformation of Bulgarian Industry (Industry 4.0) "The adoption of the concept in the Bulgarian economy will create conditions for high-tech industrial production through the integration of intelligent production systems, capacities and processes.

The most important task of the Concept is to create a framework to support the efforts of Bulgarian economy in order to adapt and adopt an active stance towards the new global technological and socio-economic processes brought about by technological innovations united by the concept "Industry 4.0".

The adoption of the Concept will allow for the application of specific policies and measures to digitize the real economy and the manufacturing sector, will help to coordinate the policies, tools and mechanisms in the different line ministries in line with the EU policies in this field.

DIH Action fully corresponds to Priority 1 of the Concept - Strengthening the relationship between science and industry in the country and Priority 2 - Technological advancement of the Bulgarian economy through: introduction of standards, building of infrastructure, development of specific mechanisms for stimulating the development and market introduction of technological innovations (new products, services and production processes) into enterprises.

Impact of the action

Stimulating the development on specific research facilities and infrastructures and expertise in favour of local enterprises and creating new kinds of added value products and services in priority areas of ISIS will lead to the following impacts:

- increased capacity of SMEs to develop competitive and sustainable business that corresponds to the dynamically developing markets through the use of ICT;
- increased innovation capacity of the SMEs in rural areas;
- increased competitiveness on the basis of ICT and innovations;
- improved business environment;
- increased level of digitalisation and ICT usage;

- improved cooperation for innovation between enterprises and academia;
- improved collaboration between research institutions and traditional businesses;
- improved cooperation among SMEs, institutions and clusters.

The DIHs will be specialised in certain technologies and sectors, according to the "smart specialisation" of the concrete Bulgarian region. As companies in that region develop more innovative products and services with the help of the hub and the ecosystem around the DIH grows, there are positive spill-over effects for the whole region. Hubs then become magnets for new companies.

The DIHs by nature aim to establish and support through its facilities a vibrant collaborative ecosystem – hub for open innovation and digital transformation acceleration. Through implementing a quadruple helix model of close liaison between academia, industry, government and citizens and by means of digital technology, the regional DIHs will enable Bulgarian SMEs in general, but especially in rural areas to advance their business and production processes and become competitive in EU Digital Single Market. The DIHs will also facilitate access to knowledge, expertise, and technology, will spread awareness, will offer mentoring for smart businesses, will provide training for digital skills, impacting significantly the human resource capacity. Through introducing new business models, supporting experimentation with innovative digital services and offering consulting for financing, the DIHs will position themselves as strategic pillars for digitization at national and regional level.

3. **Players involved (please indicate the organizations in the region who are involved in the development and implementation of the action and explain their role**

The action proposed will be effective only if it is realized through partnerships between enterprises (SMEs), research organizations, industry associations and regional authorities. Hence a variety of the following stakeholders should be actively involved in its definition, planning and implementation:

BCCI and Business Associations

BCCI is officially recognized social partner in the national tripartite dialogue among the employers' organizations, employees' organizations and the government. As social partners of the Government it has active role in the policy-making process in Bulgaria and participate in a number of decision makings, advisory and control committees and working groups related to the adoption and changes of the legislation. The organisation has participants in all groups and committees involved in the implementation of the measures of all Operational programmes related to the development of rural areas and ICT skills. Furthermore, BCCI, with its experience in creating innovation centres and in digitalization of businesses and with its huge base of members - SMEs in low technology sectors, will have an indispensable role as a mediator that will facilitate and enable the penetration of innovative digital technologies into traditional national sectors.

Bulgarian SME Promotion Agency, Ministry of Economy are involved in the implementation of Operational Programme Innovation and Competitiveness. They will launch, set-up the procedures, publicize and monitor the implementation of the grant schemes for establishment of national/regional DIHs.

Ministry of Education and Science is the managing authority of Operational Programme Science and Education for Smart Growth. The programme envisages measures related to the development of DIH on the territory of Bulgaria. As a first step a measure for establishing Centres of Excellence and Centres of Competence at national and regional level, to become the drivers of the future DIHs is under implementation.

Sofia University, Technical University, Bulgarian Academy of Sciences – they are key players in delivering knowledge transfer and developing innovations for businesses.
These are also leading ICT Competence Centres and suppliers of specialists in Bulgaria. They have strong cooperation and active collaboration with IT Industry and with high-tech innovative SMEs.

Business/Industrial Clusters

Business/industrial clusters can be used as engines for innovation promotion and facilitation because they include elements of innovation infrastructure existing in the various regions. Moreover, the clusters are considered as an effective ecosystem for the development of links between education, training and business. The total number of existing clusters in Bulgaria at present is 261 so far and they are having representation in all the regions.

ICT Cluster

The cluster has more than 280 ICT SME from different segments of the ICT Industry and 6 Bulgarian technical universities. ICT Cluster is a strategic cluster initiative of Bulgarian ICT business. The mission of the organization is to increase the competitiveness of Bulgarian ICT industry by support of ICT SME growth, promotion of ICT cluster excellence and creation of new business opportunities through cross-border, cross-industry and cross-cluster collaboration. The main goal is to boost technology transfer, innovations and R&D development in Bulgaria. The ICT cluster serves also as a platform for the development of innovative companies and innovative ideas and catalyses the process of research commercialization.

4. **Timeframe – 2019/2020**
- Preparation of documentation and requirements for the call for proposals 2019
- Announcement of the call for proposals, collection of proposals from the multibeneficiary consortia, evaluation 2019/2020
- Contracts signature and implementation 2020

5. **Costs – tbc**
6. **Funding sources – Operational Programme Innovation and Competitiveness, Operational Programme Science and Education for Smart Growth**