MARKET RESEARCH on 3D Laboratories based in Southeast Europe

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If a picture paints a thousand words,  
prototype is worth a thousand meetings.

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Introduction of 3d printing
What is 3D printing?

3D printing, also known as additive manufacturing (AM), refers to various processes used to synthesize a three-dimensional object. In 3D printing, successive layers of material are formed under computer control to create an object. These objects can be of almost any shape or geometry, and are produced from a 3D model or other electronic data source. A 3D printer is a type of industrial robot.

3D printing in the term's original sense refers to processes that sequentially deposit material onto a powder bed with inkjet printer heads. More recently, the meaning of the term was expanded to encompass a wider variety of techniques such as extrusion and sintering-based processes. Technical standards generally use the term additive manufacturing for this broader sense.

The term 3D printing covers a host of processes and technologies that offer a full spectrum of capabilities for the production of parts and products in different materials. Essentially, what all of the processes and technologies have in common is the manner in which production is carried out - layer by layer in an additive process - which is in contrast to traditional methods of production involving subtractive methods or moulding/casting processes. Applications of 3D printing are emerging almost by the day, and, as this technology continues to penetrate more widely and deeply across industrial, maker and consumer sectors, this is only set to increase. Most reputable commentators on this technology sectors agree that, as of today, we are only just beginning to see the true potential of 3D printing.
3D Labs based in Montenegro
Prode Lab (which stands for Product Design lab) is the first lab of this kind in Montenegro. It is located on University of Donja Gorica. Besides product design, Prode Lab also includes disciplines such as graphic, fashion and interior design. The main idea of the project is to enhance the Montenegrin economy by creating an environment for technology transfer. The intention is to create and develop a prototype laboratory which will become a local and a regional centre for creating and developing prototypes for various products, such as products made out of cardboard, plastic, textile, wood, stone and marble. Having that services are also subject to innovation, Lab’s development plan includes research development in that direction as well. Prode Lab also organizes lab open days periodically, in order to educate all interested companies and individuals about 3D technology. Once the Lab takes solid ground, services innovation segment will be introduced.
Prode Lab includes the following devices:

- ProJet® CJP 660Pro, professional 3D printer;
- German RepRap GmbH Protos 3D printer;
- German RepRap GmbH Neo 3D printer;
- Artec 3D, Eva Handsheld 3D Scanner;
- HP Designjet T7200, production printer;
- Shimadzu EZ-LX 5kn, Tensile tester;
- three HP Z230 Workstations

Main goal of Prode lab is to become an academic and professional prototype and product development centre. Further activities are related to the laboratory utilization through:

- prototype building,
- transformation of prototype into a final product,
- commercialization and patent activities,
- provision of sustainability and dissemination activities
3D Labs based in Southeast Europe
3D Impuls, Kraljevo

3D Impuls Lab is a scientific research unit of the Faculty of Mechanical and Civil Engineering in Kraljevo, which deals with the application of digital technologies to develop new products. The laboratory was established in the joined project Innovation Management for New Products, known by the acronym IMPulse, funded by the European Commission, the City of Kraljevo and City of Cacak. 3D Impulse Laboratory stimulates innovation and increases the competitiveness of the economy and its environment by promoting and applying digital technologies for new product development. The lab cooperates with country's economy by implementing small projects. By doing this, 3D Impuls lab supports constant development of existing and new products. 3D Impuls Lab is a center which provides educational, consultant and development services to the companies which can not afford application of modern technologies.
FabLab Petnica, Valjevo

FabLab Petnica is an educational FabLab established within the Petnica Science Center with the aim to provide high school students and teachers in the STEM (science, technology, engineering, math) field in Serbia with knowledge, tools, inspiration and connections to start implementing the Fab-Lab@School concept and STEM entrepreneurship principles in practice. Establishment of the FabLab Petnica is financially supported by The Royal Norwegian Embassy in Belgrade.

Petnica Lab activities are mainly focused on creative workshops, where attendants are shown the possibilities of 3D technology and digital fabrication. This lab is also opened for new entrepreneurship ideas and offers help to those who want to start their own startups.

FabLab Petnica also has an online platform which provides all the lectures which contain advices on how to implement digital fabrication into education.
Spark Lab, Mostar

Spark Lab is a member of Spark business park, an infrastructural complex located in the city of Mostar. Vision of the entire complex is to develop and implement new products and investments. Spark Lab is only one of the services the complex offers - it also offers Spark school, Spark startup and Spark business. Spark Lab is a place where all interested people can find and use open-source hardware, online library, 3D printers, Arduino setups, microscopes etc. Lab’s main goal is to build a team of first class experts who posses research and development skills in the fields of electrical engineering, mechanics, firmware and software. By doing so, Spark wants to show to the community how important applied knowledge is. They are currently developing hybrid powered cargo drone, which means that the aircraft will be powered by combining electric engine and internal combustion engine.
Networks Lab, Sarajevo

Networks is a business center and a co-working community in the heart of Sarajevo. It is based in an innovative building with over 1300m² of interactive & modern space. Their services are designed to inspire growth, innovations and business development. This center offers a range of differently based services. One of them is a 3D lab. Network's 3D lab is being used for research and development of products but also for educational purposes. In march, 2016, they implemented project called 3D March - Print your ideas. Event was organized with help of Bosnian Ministry of labour and social politics. This project was a great opportunity for architects, designers, artists and all the other individuals or groups interested in working in team with some of the country's best experts and on latest 3D technology. They had a chance to develop their own models and prototypes and in the end, the best of them was rewarded with 3D printer.
Smart FabLab, Sofia

Smart FabLab (SFL) is the first FabLab in Bulgaria. It is hosted at the Laboratory for Urban Design, which is a working space at the backyard of the University of Architecture, Civil Engineering and Geodesy in Sofia.

The three main areas in which SFL is specialised are:

1. Smart cities - smart buildings, smart architecture and smart transformations of public spaces;
2. Smart objects - smart sensors, wearable devices/sensors, smart objects, smart mobile device accessories, smart clothing and accessories and the Internet of Things (IoT);
3. Smart mobile apps for design and manufacturing - mobile apps for 3D and collaborative design and personal manufacturing, and mobile device accessories.

Smart Fab Lab was founded in the summer of 2013 by Transformeriti Association, Digital Spaces Living Lab and private investors.
IMS 3D Lab, Sofia

IMS 3D Lab is division of the IMS – BAS. The Lab’s mission is to develop 3D printing in Bulgaria and offer top quality 3D printing and modeling services. IMS 3D Lab works on development and shaping of the modern future of the country. Their goal is to show the people the unlimited possibilities of the 3D printing technologies and to develop and establish the lab as the prime 3D printing, modeling and prototyping organization in Bulgaria. IMS 3D lab offers a wide range of services.

Their prime fields are 3D modeling, 3D printing and cold casting. This lab is specialized in both CAD modeling and polygonal modeling for complex shapes and prototypes. They offer different possibilities for their projects and ideas as the Lab uses both FDM and SLA 3D printers to deliver best results possible. The FDM technology allows large volume prototypes to be printed in short terms while the SLA technology (great for jewelry and art projects) gives unmatched precision of
FabLab, Zagreb

FabLab in Zagreb is first 3D lab in Croatia, founded to promote new technologies in digital fabrication. It offers 3D scanning & 3D printing, laser and CNC and various tools. Lab has established international cooperation on various projects and it’s main focus and activities are in education. FabLab has an annual event called 3D printing open days. Every year, over 50 participants and a couple of hundred visitors of all ages gather to attend more than 15 lectures on educational topics, public presentations of the Ultimate 3D printers owned by the lab and 3D modeling workshops with more than 40 teachers. FabLab Zagreb cooperates with Ultimaker 3D printer manufacturer. This cooperation implies assembly of Ultimaker printers and organisation of thematic workshops for users of Ultimaker 3D printers but also offers technical support and help with using printers, solving problems and communication issues.
RogLab, Ljubljana

RogLab is production space in Ljubljana, focused on offering production tools, stimulating creative use of 3D technologies, enabling interdisciplinary collaboration as well as research and innovation-oriented creativity, bolstering connections between creative activities and business, developing projects that deal with pressing issues in urban environments and address current challenges in architecture and design with the emphasis on social and environmental responsibility.

RogLab is dedicated to activities in the fields of architecture, design and contemporary art, their interconnection and cooperation with other sectors (education, science, economy, environment, space etc) and international networking. RogLab also offers 3D workshops, which provide technology and services for rapid prototyping, support for creative industries and encourages professional development in those three target areas.
FabLab, Bucharest

FabLab Bucharest is mainly a model making lab. The lab started as a small office where architecture students were making models but later grew up into a commercial 3D lab. The team is composed of six people the majority with a background in architecture, each assigned a type of machine to operate but all tinkerers. Main idea of this lab is to be a place where people can build the things that they are passionate about and learn new technologies and techniques.

FabLab Bucharest mainly offers services for 3D printing, laser cutting and CNC milling. It provides help in design and production processes but also holds open days, when people are invited to spend a day in the lab and build something. FabLab Bucharest offers 3D printing in three types:
1. Composite dust through 3D technology print;
2. Photopolymer resin by SLS technology;
3. PLA plastics by FDM technology.
3D Lab, Athens

3D Lab is consisted of highly capable and entousiastic architects, designers and CG artists. The lab started as a hobby, and through the years it gradually became a professional studio. 3D Lab is recognized as the best 3D studio in Greece today. They have great experience and many collaborations with different companies, engineers and students. The mission of 3D Lab is to exhibit the fundamental role of visual perception and atmosphere to architecture, and make architectural visualizations accessible to anyone with a project vision.

3D Lab offers services to professionals, students and individuals. They offer some of the following services: 3D modelling, rendering, architectural animation, post processing, BIM modelling, 2D drafting and architectural and interior design. Lab uses a wide range of software - 3ds Max, Rhinoceros, Sketch-up, Archicad, Revit, V-Ray, Adobe Photoshop, Adobe Illustrator, Adobe After Effects etc.