



USAID | **SERBIA**
FROM THE AMERICAN PEOPLE

Contract Number: 169-C-00-11-00102

Project: Sustainable Local Development Project in Serbia

Contractor: Chemonics Inc.

USAID COR: Mr. Sinisa Cadjo

Issuance Date: December, 2014

Document Title: VMC Innovation and Business Development Centre – InnoBuddy

Author: Vojvodina Metal Cluster

FINAL REPORT

Name of Grantee: Vojvodina Metal Cluster

Grant Number: 021MCDNS02

Activity Title: VMC Innovation and Business Development Centre – InnoBuddy

Reporting Period: 12/11/2013 – 12/10/2014

Date of submission: 12/28/2014

ACTIVITIES

Activity 1 – Determining SOW for Custom made CRM software

Vojvodina Metal Cluster has been receiving more than 800 requirements per year, sent by domestic and international partners. All requests for proposal were processed manually which took a lot of time and human resources. The reason for developing this kind of software was to increase efficiency in successfully responding to those requests.

We gathered information from different sources (emails, minutes from B2B meetings, phones, websites, etc.) in order to give baseline information on current situation regarding the time needed to process requests and better determine SOW for Custom made CRM software. The main aim of determining technical specification of the software was to make faster the processing of the requests and giving adequate offer in reasonable time.

Project team was working, in cooperation with IT expert, on finalizing SoW for the software. Consultations were done on regular basis. Final version was submitted to USAID technical support and tender procedure was launched on April 16, 2014 and opened on April 25, 2014. Faust Soft & Design, Novi Sad was a successful tenderer who gave the best value for the money.

Activity 2 – Custom made CRM software developing and testing

We were communicating with the successful tenderer on regular basis. We had been discussing all activities from testing to implementing into companies, according to current requirements (drawings) sent by business partners from abroad and in the country.

The first phase of this activity consisted of:

- Collecting all the necessary information from VMC regarding the functionality and reporting on Custom CRM;
- Detailed analysis of information gathered;
- Converting of information into individual functionality of the system;
- Design of database and cases of using based on the functionality of the system;
- Work on GUI system (Graphic User Interface);
- Completed design of base architecture and started modular programming system with adequate framework.

Custom made CRM software is a web-based application and is linked with official VMC website and server. It offers choice in its deployment, as well as control over CRM operations. This software lets enterprises, the members of VMC customize and integrate with nearly any application, system or data source on their terms. As the business expands, it will be possible to change hosted CRM deployment to meet new business requirements, geographic presence, and the budget. It has cloud solution meaning, it involves a large number of computers connected through a real-time communication network. System architecture is client / server, allowing access through a network such as the internet or intranet and the access from any location, via the Internet, ie. access to the system is independent of location. The data and business processes in companies are protected from unauthorized access.

The tenderer had to send any kind of modifications for a review and approval by VMC team. After the CRM was delivered by the Consultant, project team thoroughly reviewed all the applications of the software. Project team was studying and testing every application separately, and then conducted cross testing.

Project team was testing the following applications couple of times, in detail:

- ✓ Submitting a new request for proposal
- ✓ Sent requests for proposal
- ✓ Collecting, analysis and process of the requests received
- ✓ Request
- ✓ The list of requests sent
- ✓ The list of requests received
- ✓ Administrator

Testing of modules by going through them few times provided us feedback in order to give maximum visibility of all modules to VMC members. A particular attention was paid to finding adequate terminology regarding metal processing and put them into applications. Final version of the software is now available on official website of the cluster, www.vmc.rs.

The responsibility for this activity lay on successful tenderer and Expert for Export and Innovation.

Activity 3: Presentation of custom made CRM software to VMC members

Draft version of the software was presented at the Business Forum "Vojvodina Metal Cluster" in the Serbian Chamber of Commerce, on September 29 2014. We introduced all benefits cluster members will have in the future business by implementing VMC software.

Furthermore, we organized Business Club as a part of Final conference (10/12/2014) for members of the cluster and one of the subject to be discussed was VMC CRM software – purpose, advantages, and instructions on how to use.

We took one step further and promoted developed software to broader audience in magazine INDUSTRIJA (Copy of the page is attached to this report).

Activity 4: Installing custom made software into 20 companies and conducting training for 20 users

In August, we asked USAID's approval for extension of the deadline for the implementation of the activities set up in Subcontract No. AID-169-C-00-11-00102 SLD_SUB_021MCDNS02, from 01 September, 2014 to 25 September, 2014.

The Consultant developed and updated the software according to the comments given by project team members. In addition, we selected 20 companies with highest export prospective that will use the software. However, most of the representatives of the companies were out of office during July and August, thus was not possible to set up the meetings and visits. First visits and trainings started at the end of September. We conducted the training for companies' representatives that will actually use the software in the following members of the cluster: Agroferocoop, Termovent SC, Pelet C masine, Citronix, Agria, KMR VISION, Emnel Solar, Jugodin, K EFEKT, Agromerkur, Narcissus, Berko, Industrometal, Rapid product, Linija SZR, Primip, Tehweld, Agrometal BMR, Terming, Demi hidraulik.

We designed and produced Instructions on how to use the software that is available to all our members, and business partners on VMC website. We also sent emails to each one of our partners who was sending technical drawings the last two years, and informing them about new service cluster provides. Instructions in Serbian and English are attached to this report.

No.	Name and surname	Company	Date	Place	Skills gained
1.	Goran Bošković	AGROFEROCOOP	31-Oct-2014	Temerin	Use of the software – the steps needed to be taken in order to send requests and answering
2.	Stanislav Cvetković	PELET C MAŠINE	31-Oct-2014	Temerin	Use of the software – the steps needed to be taken in order to send requests and answering
3.	Aleksandar Crnogorac	TERMOVENT SC	05-Nov-2014	Temerin	Use of the software – the steps needed to be taken in order to send requests and answering
4.	Andor Sekereš	CITRONIX	06-Nov-2014	Subotica	Use of the software – the steps needed to be taken in order to send requests and answering
5.	Bojan Baraković	AGRIA	06-Nov-2014	Subotica	Use of the software – the steps needed to be taken in order to send requests and answering
6.	Milan Kovač	KMR VISION	07-Nov-2014	Subotica	Use of the software – the steps needed to be taken in order to send requests and answering
7.	Hilda Liht	EMNEL SOLAR	07-Nov-2014	Subotica	Use of the software – the steps needed to be taken in order to send requests and answering
8.	Tibor Sokolai	JUGODIN	10-Nov-2014	Ada	Use of the software – the steps needed to be taken in order to send requests and answering

9.	Dragan Bešlić	K EFEKT	10-Nov-2014	Ada	Use of the software – the steps needed to be taken in order to send requests and answering
10.	Jožef Kelemen	AGROMERKUR	18-Nov-2014	Ada	Use of the software – the steps needed to be taken in order to send requests and answering
11.	Boris Karanjac	NARCISSUS	18-Nov-2014	Ada	Use of the software – the steps needed to be taken in order to send requests and answering
12.	Andrea Horvat	BERKO	18-Nov-2014	Mol	Use of the software – the steps needed to be taken in order to send requests and answering
13.	Slobodan Panić	INDUSTROMETAL	19-Nov-2014	Valjevo	Use of the software – the steps needed to be taken in order to send requests and answering
14.	Dušan Džunić	RAPID PRODUKT	19-Nov-2014	Valjevo	Use of the software – the steps needed to be taken in order to send requests and answering
15.	Zoran Dobrivojević	LINIJA SZR	19-Nov-2014	Valjevo	Use of the software – the steps needed to be taken in order to send requests and answering
16.	Slobodan Lukić	PRIMIP	20-Nov-2014	Sr.Mitrovica	Use of the software – the steps needed to be taken in order to send requests and answering
17.	Mića Đorđević	TEHWELD	26-Nov-2014	Loznica	Use of the software – the steps needed to be taken in order to send requests and answering
18.	Sven Carić	AGROMETAL	27-Nov-2014	Sombor	Use of the software – the steps needed to be taken in order to send requests and answering
19.	Branislav Banatski	TERMING	27-Nov-2014	Sombor	Use of the software – the steps needed to be taken in order to send requests and answering
20.	Ljubiša Radosavljević	DEMI HIDRAULIK	28-Nov-2014	Svilajnac	Use of the software – the steps needed to be taken in order to send requests and answering

1) AGROFEROCOOP, Temerin

Business deals concluded: 6;

Business revenue gained through new business deals is 200.000 EUR;

Business deals are related to sales of agriculture machines. Ordering entities are from the following countries: Croatia, Republic of Srpska, Macedonia, Hungary, Germany, Montenegro.

Status: some of them are in progress but some are just concluded.

2) TERMOVENT SC, Temerin

Business deals concluded: 6;

Business revenue gained through new business deals is 4.400.000 EUR;

Business deals are related to refinery and power plants. Ordering entities are from the following countries: Russia, Germany, Austria, Czech republic, Hungary, Sweden. Status: some on of them are in progress and it is expected the revenue to increase in 2015.

3) BERKO doo, Mol

Business deals concluded: 7;

Business revenue gained through new business deals is 1.700.000 EUR;

Business deals are related to providing CNC technology services and sale of agriculture machinery. Ordering entities are from the following countries: Sweden, Germany, Romania, Hungary, Russia, Portugal, Moldavia. Status: concluded and in progress.

Activity 5: Using software to process received requests from clients

Expert for export and innovation receives requests from clients and uses the software to transfer them into VMC format and send it to members. VMC members use the software to prepare proposals in VMC format following received requests. Expert for export and innovation uses the software to transfer the proposals received in VMC format to the format of the original request for proposal and sends it to clients. Due to approved extension of the execution of the Subcontract No. AID-169-C-00-11-00102 SLD_SUB_021MCDNS02, and short period for carrying out this activity, the number of technical drawings received/sent is not so significant. Nevertheless, positive effects are more than visible. Time needed to successfully respond to requests for proposals has decreased about 10 times (from 100 days to 10 days approximately). Unfortunately, it is very short period of time since the software has been operational and it is still early to talk about business revenues gained.

Activity 6 – Conducting Management Quality training (ISO 9001, ISO 14001, ISO 17025, OHSAS 18001) for 30 members

Project team was working on defining SoW for organization of the training and consulting services related to implementation of ISO standards in VMC companies. Final version was submitted to USAID technical support who launched tender procedure on April 16, 2014. The tender opening session was on April 25, 2014 and a successful tenderer was ConsAct, Kanjiža was selected as a subcontracting agency. Notification letter and application forms had been sent to VMC members in order to register companies interested in this type of services. On June 13-14, 2014 the Consultant conducted two-day training. It took place in Education Centre in Temerin. There were 37 attendants, the representatives of enterprises, members of Vojvodina Metal Cluster.

Subject: Quality management training

Place and Date: Temerin, 13-14 June, 2014

Venue: VMC Education Centre

Theme: 1) Standards – interpretation of business system standardization process
2) Process approach – requirements according to ISO certification 9001:2008
3) ISO 14001:2004 – short introduction and comments
4) OHSAS 18001:2007 – specific requirements and comments

No.	Name and surname	Company	Skills gained
1.	Mića Đorđević	TEHWELD	Learn the principles and practices of effective quality management system audits compliant with ISO standards
2.	Dragan Đorđević	TEHWELD	Learn the principles and practices of effective quality management system audits compliant with ISO

			standards
--	--	--	-----------

3.	Ljiljana Cvetić	JKP TEMERIN	Learn the principles and practices of effective quality management system audits compliant with ISO standards
4.	Atila Kalmar	DIEX-VAL	Learn the principles and practices of effective quality management system audits compliant with ISO standards
5.	Laslo Kekeny	PYROTHERM	Learn the principles and practices of effective quality management system audits compliant with ISO standards
6.	Danilo Bobić	JKP TEMERIN	Learn the principles and practices of effective quality management system audits compliant with ISO standards
7.	Rastko Stajšić	JKP TEMERIN	Learn the principles and practices of effective quality management system audits compliant with ISO standards
8.	Desa Stupar	JKP TEMERIN	Learn the principles and practices of effective quality management system audits compliant with ISO standards
9.	Varga Deneš	JKP TEMERIN	Learn the principles and practices of effective quality management system audits compliant with ISO standards
10.	Dalibor Grujičić	JKP TEMERIN	Learn the principles and practices of effective quality management system audits compliant with ISO standards
11.	Tica Marta	JKP TEMERIN	Learn the principles and practices of effective quality management system audits compliant with ISO standards
12.	Stanislava Varga	JKP TEMERIN	Learn the principles and practices of effective quality management system audits compliant with ISO standards
13.	Mirko Đukić	V&K INŽENJERING	Learn the principles and practices of effective quality management system audits compliant with ISO standards
14.	Jelena Koledin	JKP TEMERIN	Learn the principles and practices of effective quality management system audits compliant with ISO standards
15.	Sabolč Deme	JP DIREKCIJA TEMERIN	Learn the principles and practices of effective quality management system audits compliant with ISO standards
16.	Stana Matavulj	JP DIREKCIJA TEMERIN	Learn the principles and practices of effective quality management system audits compliant with ISO standards
17.	Monika Kurcinak	JKP TEMERIN	Learn the principles and practices of effective quality management system audits compliant with ISO standards
18.	Amalija Bočković	JKP TEMERIN	Learn the principles and practices of effective quality management system audits compliant with ISO standards
19.	Slavko Vrhovac	OPŠTINA TEMERIN	Learn the principles and practices of effective quality management system audits compliant with ISO standards
20.	Jelena Gajinov	INTEL INŽENJER.	Learn the principles and practices of effective quality management system audits compliant with ISO standards
21.	Marko Radović	JP 'GAS' TEMERIN	Learn the principles and practices of effective quality management system audits compliant with ISO standards
22.	Bojana Tomić	JP 'GAS' TEMERIN	Learn the principles and practices of effective quality management system audits compliant with ISO standards
23.	Saša Matić	BERKO	Learn the principles and practices of effective quality management system audits compliant with ISO standards
24.	Miroslava Radić	TEHNOLINK	Learn the principles and practices of effective quality management system audits compliant with ISO standards

			standards
25.	Daniel Pajfer	JKP TEMERIN	Learn the principles and practices of effective quality management system audits compliant with ISO standards
26.	Bojan Baraković	AGRIA	Learn the principles and practices of effective quality management system audits compliant with ISO standards
27.	Renata Tadić	AGENCIJA ZA RAZVOJ TEMERIN	Learn the principles and practices of effective quality management system audits compliant with ISO standards
28.	Olivera Kljajić	AGENCIJA ZA RAZVOJ TEMERIN	Learn the principles and practices of effective quality management system audits compliant with ISO standards
29.	Čaba Varga	AGENCIJA ZA RAZVOJ TEMERIN	Learn the principles and practices of effective quality management system audits compliant with ISO standards
30.	Sven Carić	AGROMETAL BMR	Learn the principles and practices of effective quality management system audits compliant with ISO standards
31.	Dragan Jaić	TERMOVENT SC LIVNICA CELIKA	Learn the principles and practices of effective quality management system audits compliant with ISO standards
32.	Zvezdana Radulović	TERMOVENT SC LIVNICA CELIKA	Learn the principles and practices of effective quality management system audits compliant with ISO standards
33.	Mira Graovac	TERMOVENT SC LIVNICA CELIKA	Learn the principles and practices of effective quality management system audits compliant with ISO standards
34.	Daniela Čontoš	VMC	Learn the principles and practices of effective quality management system audits compliant with ISO standards
35.	Biljana Pekez	VMC	Learn the principles and practices of effective quality management system audits compliant with ISO standards
36.	Ivana Pezerović	VMC	Learn the principles and practices of effective quality management system audits compliant with ISO standards
37.	Mirjana Tomin	VMC	Learn the principles and practices of effective quality management system audits compliant with ISO standards

Activity No.7: Provision of consulting services related to ISO standards to 4 members and enter ISO certification process

After training conducted, 4 enterprises were selected and they received consulting services related to ISO 9001: UTVA Milan Premasunac (Kacarevo), Termovent SC Livnica celika (Backa Topola), PYROTHERM (Coka) and DIEX-VAL (Senta). Before planning site visits, we had informed the representatives of the companies selected about our decision and had given contact details of persons in charge of this matter.

During consultant's visits, there were discussed topics based on certain phase of the project. In addition, there were designed documents that make up documentation basis for QMS standard requirements, such as: the minutes about consulting services, internal audit, training record, Quality policy, Rules on the quality, different procedures, etc.

Topics that were discussed during on site visits are as follow:

1. Analysis of the situation in accordance with the standard requirements, defining of action plan;
2. Appointing of team in charge of product and safety quality, appointing of QMS management representative;
3. Training of the team according to the QMS standard requirements;
4. Draft of mandatory procedures and guidelines;
5. Drafting of other documents;
6. Adoption of final version of the document with attachmentsw and records, the use of recorded solutions in practice, internal and external documents;
7. Training of internal auditors for QMS and conducting internal audit and re-testing of QMS system by top management.

The realization of activities related to the implementation in TERMOVENT SC-LIVNICA CELIKA AD started on June 6,2014 and finished on July 12,2014 (6 visists organized). The area for the application of QMS system is steel casting and production of special industrial metal framework for use in process industry, water supply and power, but under high temperature and pressure.

The realization of activities related to the implementation in UTVA Milan Premasunac Kacarevo started on June 26,2014 and finished on July 11,2014 (5 visists organized). The area for the application of QMS system is production of special purpose equipment, process equipment and making of spare parts.

The realization of activities related to the implementation in DIEX-VAL DOO started on June 12,2014 and finished on July 10,2014 (6 visits organized). The area for the application of QMS system is production of devices for induction heating and melting up to 500 kW and frequency from 1 kHz to 20 MHz.

The realization of activities related to the implementation in PYROTHERM SZR started on June 13,2014 and finished on July 11,2014 (6 visits organized). The area for the application of QMS system is production of furnaces for metallurgy.

The Consultant submitted final report to Monitoring team on July 15, 2014 and the contract was successfully executed.

No.	Name and surname	Company	Skills gained
1.	Marija Kontić	UTVA Milan Premasunac, Kačarevo	Learn to review current business systems and documents and make suggestion what needs to be done to make the business ready for a full ISO 9001 certification audit. Able to develop and improve the processes and documents in the organisation to the required content and standard.
2.	Marija Graovac	TERMOVENT SC- LIVNICA CELIKA AD, Bačka Topola	Learn to review current business systems and documents and make suggestion what needs to be done to make the business ready for a full ISO 9001 certification audit. Able to develop and improve the processes and documents in the organisation to the required content and standard.
3.	Dragomir Vujačić	DIEX & VAL DOO, Senta	Learn to review current business systems and documents and make suggestion what needs to be done to make the business ready for a full ISO 9001 certification audit. Able to develop and improve the processes and documents in the organisation to the required content and standard.
4.	Teodor Mrkšić	PYROTHERM SZR, Čoka	Learn to review current business systems and documents and make suggestion what needs to be done to make the business ready for a full ISO 9001 certification audit. Able to develop and improve the processes and documents in the organisation to the required content and standard.

1) TERMOVENT SC LIVNICA CELIKA, Backa Topola

Business deals concluded: 3;

Business revenue gained through new business deals is 3.000.000 EUR;

Business deals are related to construction and industrial machinery. Ordering entities are from the following countries: Italy, Slovenia, Hungary. Status: in progress.

Activity No.8: Identify minimum 5 development projects and potential financing sources

We had carried out the initial activities before the engagement of the Expert for R&D. We had been working together with the consultant appointed by USAID on visiting 20 companies with the aim to assess their level of development, and their potential to expand to new markets. The reaction of VMC members were very positive. These visits opened a number of new possibilities we could work on and gave us directions on what development projects to focus.

Furthermore, according to discussion and agreement made between Mr. Howard Ockman and a

cluster manager, we started writing project proposal on the following three issues in order to increase competitiveness and internationalization of companies and work of the cluster as well:

- 1) Interactive map as a tool for improving the visibility and competitiveness of VMC members in the global market;
- 2) Development and procurement of coordinate table that will enable completed and improved services of VMC Workshop for members of the cluster, and thus directly affect the cost reduction in the total cost of the final product, which would increase their competitiveness in the global market, and
- 3) Development and improvement of common wide product which will involve cluster members and contribute to increased productivity and competitiveness.

Meanwhile, we had a meeting with Expert for R&D and discussed about responsibilities and tasks he was assigned to, ongoing projects and other possible projects to be developed. It was planned to organize at least 3 round tables in order to facilitate dialog between VMC members and R&D institutions and identify minimum 5 projects. Following the event “Vojvodina Metal Cluster Business Forum” organized on 29th of September - a number of meetings have been initiated by participants of the event and the organizations that have heard about the event through media. Identified projects should likely to be of interest to a number of VMC members and have potential to be funded from available funding sources. They focused on the 5 areas identified by the Innobuddy proposal.

Project idea No.1 – 3EMT (Eco Energy Efficiency Management Tool) linked to the topic No.3 - The project related to capacity improvement - VMC Center for research and development in cooperation with R&D institutions

One of the project ideas which was identified in the area of Eco Energy Efficiency, which was a topic interesting to many members of the VMC. The idea was brought up by a VMC partner organization from Italy (*Friuli Innovazione- FI*), and the R&D expert shared it among several VMC member companies and staff. Following the communication and meetings with several experts, the following idea was the concept of the first R&D project to be developed within Innobuddy project.

The project will start from an existing tool (Eco Energy Efficiency management Tool) developed successfully within a FI Central Europe Project (CEEM - <http://www.ceemproject.eu>) with the aim to give companies the possibility to self evaluate their eco-energy performances and compare them with other registered companies. The software is accessible through the CEEM website as an easy, user-friendly, free of charge tool for companies. The Tool allows companies to self-assess their “green” performance thanks to a questionnaire; companies can then benchmark with other companies; it is possible to deliver a customized Assessment Report. Present project will allow to enlarge the use of the tool to all the European Countries thanks to a technical upgrade of the Tool with new functionalities (...).

The tool will be accessible at European level: companies from all the Countries will have the possibility to comply the questionnaire and get a report. Obviously, first Countries to be involved in this process will be the one partner of the project. In this case, questionnaires and texts will be also translated into the mother languages. For companies willing to participate, but not yet represented by a formal partner, the documents and the questionnaire will be available in English. Special attention will be given to energy-intensive industries (represented by the sector

of chemicals, paper and pulp, cement and steel), even if the whole industrial system will be considered without sectorial barriers.

The partnership will be engaged in actions aiming in sensitizing target groups and training activities aimed to improve the availability of skilled energy auditors and energy managers and the diffusion of energy management systems and best practices. For that purpose, the Eco-Energy Management Academy will be established (.....).It will be a virtual and open organization. The courses will be organized in different European Countries thus contributing to the sustainability of the project. The curriculum of the Eco-Energy Management Academy will be designed for professional service providers as well as the management of companies and other professionals seeking further education in Eco-Energy Management. The curriculum will offer certificate for different levels of proficiency in Eco-Energy management starting with the beginners level “Eco-Energy Guide” to “Eco-Energy Expert ” and Eco-Energy Auditor”.

WP structure

WP1. Management and Coordination

WP2. Industrial systems efficiency benchmarking

WP3. Eco-Energy Management Academy

WP4. Dissemination, awareness raising and communication

Project idea No.2 – CISME ACME linked to the topic No.3 - The project related to capacity improvement - VMC Center for research and development in cooperation with R&D institutions

Background of the project:

At the turn of the 21st century radical changes have emerged in global market which impose significant adjustments in technology, materials, and business processes to provide adequate response to new requirements. Market demands are increasing and they are directed towards following concept: the product must be highly customized in accordance with specific requirements of the customer. Customers do not want generic products, they rather require smaller quantities of customized products with significant difference in design and they want to be treated as individuals with different needs. Therefore, companies need to have a wide range of different products that must be quickly introduced to the market and above all be innovative and perform better in comparison to strong competition. Large number of different final products, short product lifecycle, short time for the introduction of new products and specific customer requirements in terms of product delivery made many problems for manufacturing companies.

Having in mind that companies, especially SMEs, do not have the financial capability, knowledge or sufficient capacity to implement new technologies, implementation of the concept of agile production will be carried out in a cluster environment with the support of local and foreign experts.

Embracement of agile manufacturing concept will be crucial source of competitiveness, and companies will be able to easily, quickly and cost efficiently transfer to new production concept - Agile Manufacturing. This production concept is based on a high degree of automation, but full implementation of agile manufacturing concept demands integration of all factors involved in production cycles which are connected in supply and value chain. Utilization of modern approaches in rapid prototyping and product development and agile manufacturing significantly

increases enterprise competitiveness, but this concept is often related with only one or just a few companies. Our approach is directed to networking large number of companies within the cluster, collaborating closely on new product development or manufacturing. Another problem is generally accepted concept that only highly developed companies and economy can implement and utilize emerging trends and technology. This project comes as a solution to this problem. Project results should create environment and show that, with knowledge transfer from experts from highly developed industries, best practices and experience from EU companies together with scientific potential in Serbia can help to apply agile manufacturing concept in enterprises in transition countries like Serbia. During project implementation selected companies should create products competitive on EU market and accepted on markets for Germany, Slovenia, Italy and so on.

Agile manufacturing implementation in a cluster environment represent a modern concept which is focused on achieving good results even if companies do not have a high technology tools.

Serbia is currently going through transition process. As part of the former Yugoslavia, before outbreak of the war in 1990, Serbia had highly developed economy based on: metal industry, textile industry, military industry, food industry, retail chains - in many segments firms in Serbia had highly skilled labor and well developed companies being at the forefront of European and global standards.

Current economic situation in Serbia is much different from what it used to be - industry and economy is very weak, especially the metal complex. This fact was the main motive to create project in 2011 with result of establishing and developing metal cluster in Vojvodina. The project was funded by EU technical assistance through a regional program of socio-economic programs RDEPR2 and gave excellent results. The project was awarded third place in the category of IPA projects (according to the European Association for the projects (EPA)) on the EU level which shows high quality of results. This project enabled conditions for more than 100 companies of metal complex to join Vojvodina Metal Cluster and network and act jointly on the international markets.

General objective of the project:

Improving SMEs competitiveness with use of Agile Manufacturing concept in cluster environment through: promotion of technological knowledge, establishment of high quality products rapid development support system, with establishment of a system of business management that will eliminate possibility of various products quality degradation in long term.

Specific goals:

1. Establishment of operational cluster center for rapid prototyping and product development.
2. Improvement of production processes with aim of achieving constant quality and minimizing losses. (In accordance with the concept of lean / six sigma) to be established in at least 5 companies.
3. Joint technical/technological projects coming from companies from Serbia and EU (minimum 3) to be confirmed / ensuring the sustainability of project results
4. Creation of knowledge base in enterprises necessary for the further development and application of agile manufacturing concept

Results:

- Signed partnership contracts between EU and Serbian companies
- Implemented new production concept and new technologies, adopted EU best practice, in cluster companies.
- Developed new products aligned with EU standards and specific requirements from selected companies from EU (Germany, Slovenia, Italy...)
- Establishment of cluster management system and laboratories for Entry Level Quality Control
- Developed new methods of business and product classification in accordance with concept of Agile Manufacturing
- Developed new software used for supporting production management in cluster environment
- Established system for integrated production management at cluster level
- Developed software to support production management in a cluster environment
- Increased level of cluster companies export to EU markets
- Creation of new jobs in cluster companies
- Dissemination and support of derived methodology in other companies in the cluster
- Contracts of Partnership EU companies and companies in Serbia

Strategic background of the project:

According to the Strategy and policy of industrial development of Republic of Serbia, 2011-2020, Small and Medium-Sized Enterprises (SMEs) represent an important part of the Serbian economy and last several years SMEs are the main holders of economic growth and employment. In line with this fact, it can be said that SMEs are the most effective and the most dynamic subjects in the Serbian economy.

In the period from 2004 to 2010, 3% of foreign investments in Serbia was directed in metal industry which put this industry in the third place of the total foreign investments in domestic economy. First place goes to production of food and beverages (5,9%) and the second one is production of chemical products(5,5%).

In the forecast period for 2020 expectations are that industry will have a growth and a larger number of employees, around 500.000, which is a 13% more than 2009.

In order to improve their current position, one of the conditions is to encourage SMEs to place their products on the foreign markets. Usually, these companies do not have resources, knowledge and skills to expand their business activities on foreign markets and they need support at the local and global level.

SMEs in the metal sector have an important role in economic growth and that is confirmed by fact that in the 2020 we can expect growth of foreign investments in this sector. Current investment in FIAT and other similar companies will improve general conditions in the metal sector of Republic of Serbia.

This project is in synergy with Action plan for the steel sector confirmed by European Commission (IP/13/527 11/06/2013).

The EU is the second largest producer of steel in the world, with an output of over 177 million tonnes of steel a year, accounting for 11% of the global output and employing over 360 000 people. According to the OECD, global steel demand is expected to increase to 2,3 billion tonnes by 2025, mainly from the construction, transport and mechanical engineering sectors, in particular in emerging economies. It is vital that the EU steel industry is fit to take full advantage of this competitive market.

Steel is closely linked to many other downstream industrial sectors such as automotive, construction, electronics, mechanical and electrical engineering.

The project activities are consistent with future plans for EU steel and metal companies - promotion of environmentally friendly technologies through the development of new types of steel, and stimulation of innovative R&D, particularly for the very expensive pilot and demonstration phases. For 2014-2020, research and innovation is to be funded mainly through the Horizon 2020 programme and European Innovation Partnership for Raw materials.

Project idea No.3 – F4E (full proposal developed) linked to the topic No.2 - The project in the field of education of employees in companies/ SMEs, the members of VMC (welders, locksmiths, moulders, etc.)

Specific objective(s)

The F4E proposal aims to support entrepreneurship in Europe's less developed regions (namely in Central and Eastern Europe (CEE) and candidate countries from the Balkan and Turkey) by implementing a mobility programme for the exchange of experience, knowledge, skills, methods, business support and development measures. Via the actions of the programme the partnership of the project will strengthen the competitiveness and business prospects of the participating entrepreneurs - by acquainting them with successful entrepreneurial operation and culture - through the exchange of know-how, technical expertise, management skills and methodologies between new and experienced entrepreneurs from Member States and acceding countries.

Although, the consortium consists mainly of partners from CEE and the Balkan regions, the activity of the consortium covers the whole of Europe. Apart from geographical aspects, the compositions of the consortium displays a mixture of competencies and areas of operation; bringing together consultants, universities, clusters, chambers of commerce, think-tank, SME, technology parks and governmental institutions from the field of innovation and business development.

The project contributes to the enhancement of the implementation of the Small Business Act of the EU contributing to achieving the objectives of the Europe 2020 Strategy. In the present economic environment it is difficult to obtain finance and new markets therefore the aim of the partnership will be to enhance the development opportunities of local businesses through job creation, the setting up of new enterprises, the development of existing young enterprises and businesses and personal networking actions on an international scale.

The exchange programme will offer indirect assistance to over 200 entrepreneurs of which 140 will be involved in the actual mobility programme. Thanks to the contribution of the consortium 84 new entrepreneurs (NE) will stay at least 3-4 months abroad to learn in a nurturing business environment, beneficial for development and the establishment of companies. Another 56 entrepreneur will be involved in the programme as Host Entrepreneur (HE), an opportunity to learn and adopt new methods and procedures into regular practice, to develop international relations and to make a distinguished market appearance internally and externally.

Managers and employees of companies across the EU and the acceding countries will take part in the mobility programme, too. They will benefit through the knowledge exchange of skills, innovative approaches, contacts and intercultural inputs. Employees, start-up companies and collaborators will benefit from the enriched exchange of skills, innovative approaches, contacts and markets arriving from abroad. Indirectly, consumers, clients and suppliers can also benefit from the programme through improved services resulting from the increased knowledge and skillset of the participating entrepreneurs.

Target group/audience

The direct actions of F4E cover the participating Intermediary Organisations (IOs) countries while its indirect ones affect a much wider geographical area, namely all Member States and candidate countries. The potential indirect beneficiaries and the direct target groups (NEs and HEs) will come from this territory, in general with a non-defined nature, although special attention will be made in case the applicants are: young entrepreneurs, start-ups with motivation and ambition to learn and improve; female entrepreneurs; entrepreneurs from the traditional sectors; entrepreneurs of the agriculture and food sector; science based entrepreneurs; entrepreneurs open to internationalization actions and new international markets.

Although the consortium partners operate in various industrial and professional areas the involvement of entrepreneurs will not be limited in this respect, the only selection criteria will be a full correspondence to the applying rules and requirements, displayed motivation and ambition and quality of application.

A direct aim of the partners is the facilitation of job creation and promotion of entrepreneurship. European SMEs lost altogether 9.3% of their value added and about 0.5% of their workforce. One of the most important indirect goals of the project therefore is to assist entrepreneurs to create companies and, through companies, jobs. It is typical of the partner countries that entrepreneurs, especially new and starting ones receive little or no support from their regional or national development programmes, an initiative like this therefore creates an unparalleled opportunity for learning and development.

NEs will benefit from the project in:

- receiving complex, tailor-made assistance, guidance and consultancy from professionals
- receiving and opportunity to effectively improve on business management skills and procedures
- learning practical solutions and skills in a given industrial and business area
- learn the know-how of effective business management
- learning about another country's business culture and business mechanisms
- learning about foreign markets with increased chance of market entrance
- receiving an opportunity to establish long-lasting relations on an international scale

HEs will benefit from the project in:

- hosting a motivated entrepreneur with potential added value on business development
- learning about another country's business culture and business mechanisms
- learning about foreign markets with increased chance of market entrance
- receiving an opportunity to establish long-lasting relations on an international scale
- improving status as a supporter of entrepreneurship building

Indirect targets will benefit from the project in:

- learning about the availability of such development programmes
- engage in collaboration actions with support organizations
- engage in cooperation with young entrepreneurs

The managerial and technical capacities of the target groups will be improved in the case of new and experienced entrepreneurs alike, although in differing areas. NEs will learn a range of

effective practices, methods, technical skills and procedures to establish and develop their business. They will learn first-hand how a successful business is managed both financially and technically. IOs will make especial attention to facilitate matchmakings when there is great amount of managerial training is provided on behalf of the host entrepreneur.

As far as host entrepreneurs are concerned they will encounter a completely “foreign” mentality and business management and development approach that might provide useful insights especially if they are based on novel, innovative ideas and methods a more experienced entrepreneur might not have been introduced with. On the other hand it will mentor and coach a less experienced entrepreneur, which directly and indirectly improves his/her managerial capacities.

In order to ensure smooth and trouble-free collaboration between NEs and HEs the consortium must closely monitor the processes and interactions between the entrepreneurs through regular interviewing of both parties.

Overall concept, main ideas, models and assumptions

Basic assumptions and actual facts behind the generation of the project concept

- a) East- and South-East Europe and the enlargement countries show significant shortcomings as far as the resources, means, strategies and solutions to the difficulties young entrepreneurs face - in terms of actual, efficient business support and on-site practice and learning, essential for their development, - are concerned
- b) Adequate geographical coverage and access to wide range of entrepreneurs must be ensured
- c) Organizations of extensive experience in enterprise development and internalization actions and with deep insight into the character and requirements of the target audiences must be involved
- d) Local solutions addressing the particular problems of young entrepreneurs should be encouraged to be identified by each partner
- e) At least one “EYE experienced” member should be involved in the consortium
- f) At least one country from Western Europe must be involved in the consortium to facilitate mobility actions to the western part of Europe
- g) Highly experienced staff must be ensured to carry out the project related actions

Performance indicators / Expected impact

In the majority of the participating countries it is very common that new or future to be entrepreneurs invest all their efforts and resources into keeping their enterprise alive which, in most cases, hinders them to concentrate on actual development and an effective company establishment. It must also not be forgotten that many of these new entrepreneurs are necessity entrepreneurs, meaning that they have limited or no choice but to establish their own enterprise in order to make ends meet. Such enterprises have a tendency of either going bankrupt in a few years’ time or operating at the verge of bankruptcy, hardly capable of making any noteworthy development during their existence. One of the reasons of such situation to happen originates from the lack of practical knowledge and skillset on behalf of the new entrepreneurs on how to successfully establish, manage and develop a business and a company.

One of the fundamental aims of our project is to assist young entrepreneurs to experience and learn in practice the necessary skills, methods and practices of effective company management. Our assisting actions will strive at showing them how they can make the most out of their

capacities, competencies, opportunities and resources, in order for them to establish a successful, self-sustainable enterprise instead of a simple sustenance of it.

Actions that facilitate successful development of business ideas and company establishment:

- tailor made support to the individual entrepreneurs to help identifying critical elements in the various phases of enterprise establishment or development (personal interviews, preliminary research)
- targeted identification of available and existing advantages, good practices and solutions (personal interviews)
- targeted identification and addressing of specific needs and shortcomings manifested at the new entrepreneur (personal interviews, analysis of professional and financial details)
- tailor made search and matching procedures to find the most relevant and possibly most suitable host entrepreneur
- assistance in mobility and internalization activities - preparation for the culture shock (personal discussions, preparation of good-to-know manuals (host country introduction) regular inquiries while abroad, feedback collection)
- preparation of the host entrepreneur for the specificities of the new entrepreneur (information provision on professional and training background, local characteristics, regional, cultural, political characteristics, etc.)
- sustained support for company development following the exchange period (identification of potential resources for development actions, revision of business ideas and plans, follow up support and guidance, etc.)
- assistance with internationalization opportunities outside the EYE programme (identification of potential networking and collaboration opportunities, assistance/consultancy on available funding programmes, identification of potential partners for collaboration via existing networks and collaborations, etc.)
- preparation of a handbook on the difficulties of enterprise establishment, management and development and a collection of good practices (on the basis of input from new entrepreneurs following their learning period abroad)
- assistance to help new entrepreneurs participating in the programme to stay in touch with EYE and the network of their counterparts (regular follow ups and information provision on cooperation opportunities or activities of formal and informal kind)

Performance indicators

- a) At least 1 personal meeting with each NE and HE: 200 meetings
 - b) Feedback reports from NEs on a monthly basis
 - c) Information pamphlets on the host countries: depending on number of host countries
 - d) Follow up documents to NEs from IOs on potential and available internationalization, collaboration actions and local opportunities: 84
 - e) Handbook: 1 (regular updating)
 - f) Email follow ups on cooperation opportunities to interested NEs: 150+
- Performance indicators with relation to project implementation
- a) NEs assisted in agreed relationships: 84
 - b) HEs participating in the programme: 56
 - c) 200 registered entrepreneurs
 - d) Communications items (leaflets): 10 000
 - e) Communication items (posters): 20
 - f) Promotional events (info days): 10

- g) Press releases: 10+
- h) Media interviews: 10

Exchanges of experience and information on obstacles and useful solutions: Handbook on obstacles and practical solutions.

As a supplement/part for the business plan (required to be submitted by NEs) the Intermediary Organizations will ask new entrepreneurs to list and detail the obstacles and challenges they face and experience when setting up or managing a new enterprise in their own region. The specificities of the document will be defined by the project consortium. Following the learning period abroad the new entrepreneurs will be asked to provide a report detailing the actions, methods, solutions they experienced and/or learnt during their stay at the host entrepreneur that provided a solution to the obstacles and challenges they faced at home. After a defined period the NEs will be asked again to prepare a report on their application of the learnt methods and solutions and their effect on the identified obstacles and challenges. In order to enable the regular updating of the handbook it will be prepared as a downloadable document, allowing for modifications and editing. The handbook will be made available to each NEs and HEs participating in the program.

Enhancing market access and networking

To support the market entrance and local / international networking of the participating entrepreneurs (both NEs and HEs) the consortium members will take advantage of their existing networks, their cooperation with local and international networks and business support organizations and the services of the local Enterprise Europe Networks. IOs will also help the entrepreneurs in identifying the most suitable international networks (beyond the above listed ones) matching their area of operation and/or interest and provide assistance to contact establishment or any other practical or official action. When required, IOs will make use of the support of other IOs (outside their own consortium) to facilitate easy access to suitable networks.

Multiplier effects

Since one of the fundamental objectives of the project is to facilitate not only individual Erasmus stays but also the introduction and nurturing of a more efficiently operating entrepreneurial culture in the target areas it is of vital importance that the assistance and the services of the project partners will not subside subsequent to the return of the new entrepreneur. In order for the project to sustain the achievements achieved through the partnerships the project partners will offer a range of supplementary services to the involved entrepreneurs.

a) On the basis of the NEs' experience, the reports they prepared, the feedback they gave and received and the practical solutions, methods and procedures learnt, the initial business plans submitted by the NEs as part of their application will be revised and modified with the direct involvement of the entrepreneur's Intermediary Organization. In case the IO lacks the necessary competencies to provide actual assistance its role will be to channel the respective NE to local business support organizations, chambers of commerce, etc. that provide such services to companies as their normal area of operation. Each IO will be required to provide the lead IO with follow up reporting on the means of providing the necessary support subsequent to the return of the NE.

b) In case the NEs require further on-site assistance which the respective IO cannot fulfil the IOs will assist NEs to identify and make contact with local business incubators or similar business support organizations that can provide the required services. Local IOs will also offer help to

identify state / regional or other financial resources for the NEs to support their incubation.

c) In harmony with the specific area of operation and industrial field of the NEs IOs will identify relevant and available co-financing programmes suitable for the NEs for securing funding for their development purposes. It is the duty and obligation of the respective IO to identify not only local, regional or national initiatives but international ones as well. In case the concerned NEs come with concrete development projects of an international nature IOs, besides the above detailed assistance, will introduce them to the local EEN members in order to further strengthen the chances of successful project building.

d) As far as further advisory services are concerned the returning NEs will be given the opportunity to take advantage of various mentoring and coaching assistance (at the relevant IO) on predefined terms (mutually agreed cooperation) in pre-defined areas. In case the relevant IO offers trainings or courses on the particular field the NE needs improvement he/she will be given the opportunity to participate in it free of charge.

e) In case the cooperation between a particular NE and HE proves to be exceptionally fruitful the concerned IO will contact its counterpart to suggest collaboration to identify further opportunities and funding sources for their entrepreneurs to extend their collaboration / or engage in some other sort of joint undertaking. Once such opportunity is identified the IO (to whose region/country the specific support programme belongs) can offer direct assistance to the entrepreneurs. Such collaboration will require specific agreements between the concerned IOs. Co-ordinator will provide a special assistance for Partners in an online handbook form concerning refundable and non-refundable financial funding opportunities, etc. that can be used for providing a special and complex service for applicants and that can be potentially completed with country specific information. This handbook will be the basis of the development of the NEs' business plan for the future.

Project idea No.4 – B-MINE linked to the topic No.1 - The project in the field of education of cluster management for providing services to VMC members

Objectives

B-MINE aims to develop a multi-disciplinary business model innovation ecosystem, which will help European companies (large and SMEs) to improve their efficiency not only from a conomic point of view but also from a social and sustainable one, being one of the starting points of a new European way of providing products and services. The main objective is to offer an easy to use framework that will respond to specific organizational entities requirements in terms of BMI. Then, B-MINE will offer different solutions and approaches, which will be adequate to all the type of organizations but with the capability of being non necessary to implement them all not even at their maximal possibilities. This approach will help to better cope with the needs of, for instance, small SMEs with 10 employees and no experience in BMI and the ones of larger organizations with 200 employees and with experience in BMI. The project will develop 11 main Outcomes, being all of them directly defined to fully reach the main four objectives below presented. Then, organizational entities will be find, among others: an innovative BMI casuistic, which will be the consequence of bringing the state-of-the-art beyond and of the analysis of business requirements, and will allow to classify them in terms of BMI capabilities when compared their intrinsic characteristics with the ones defined within the casuistic; the possibility of identifying potential BMI opportunities and have available an a-priori value/risk analysis,

which will output whether to apply a certain BMI or not and the expected probability of success; a customised open innovation space with customized guidance for all the different needs; the possibility of defining BMI scenarios that will output, based on data from early stages, whether to carry on with the BMI or not, as well as to identify possible successful non a priori BMI sources; the possibility to compare their BMI performance with other cluster/sectors/organizations by mean of novel reference models; the access to a customised and easy-to-use technological platform; Serious Games as a tool for training in the B-MINE development.

B-MINE brings together to specialist from diverse backgrounds and proved experience on business model innovation at different levels and from different perspectives. This multi-disciplinarity of the consortium within the own common business innovation models is the only way to bring a necessary diversity in order to deal with such an ethereal, complex and dynamic issue.

Major objectives

The project will design, develop, validate and enrich the conceptual, methodological and technological tools in order to achieve the following major objectives:

Objective 1.- To advance existing business model innovation knowledge beyond the state-of-the-art.

Challenge: To analyse the current knowledge, advance it and to discover new knowledge regarding business model innovation. Additionally, it will be necessary to identify the existing relationships among business model innovation components (current and new ones) in order to be able to better understand their importance and establish coherent business model innovation possibilities by generating an innovative BMI casuistic. This research will not only focus on literature review but also on investigating real results case studies at the practitioners' side.

Objective 2.- To make this new knowledge easily accessible.

Challenge: As important as to generate knowledge is to be able to properly transmit it in this type of project. Therefore, a European business model innovation technological platform together with some designed Serious Games will help to interact, communicate and train companies in the usage of this new knowledge.

Objective 3.- To develop mechanisms (frameworks, tools, methodologies, etc) to adjust this new knowledge to individual companies.

Challenge: Once the new knowledge has been created and the tools to make it accessible are developed it is necessary to adjust it to companies. To do this it will be necessary to understand the current situation of the specific company and to support it and advise it when deciding whether or not, and to what extent, to apply business model innovations.

Objective 4.- To reach out to the maximum number of EU companies (and a minimum of 2 million EU SMEs).

Challenge: The definition of this objective represents itself the main challenge. B-MINE counts with within the consortium with more than 650.000 potential organisations to be reached within the project. Additionally, a coherent and realistic dissemination plan has been developed in order to reach this figure.

Concept and approach

Design, implementation, re-definition and sustainability of business models are complex tasks. Looking at the literature there is not a common widely agreed definition of what a business model is (Amit and Zott, 2010). Many authors tried to provide a definition, based on different success histories, which resulted in many different definitions. However, it is clear that an efficient business model should be able to capture value and to provide customers with what they want (and are willing to pay for). Some approaches even question whether a business model is important or not regarding organizational benefits regarding the trade-off between the effort to understand the business model and the investment associated. In general, it is possible to affirm that in today's environmental business world, these organizations that realise what their business model is are in a much better position to compete and to achieve sustainable competitive advantages, as they will be able to better cope with changes both endogenous and exogenous (Baden-Fuller and Morgan, 2010).

But what is a business model? According to Chesbrough (2010) a business model must, among others, possess the next characteristics: Articulate the value proposition, identify the targeted market system, define the necessary value chain structure, estimate the associated foreseen costs and benefits, describe the position of the organization and formulate the competitive strategy. There are many frameworks that could be used to describe and show the AS-IS business model of an organization, i.e. the well-known Canvas model (2010). But the next questions are: How long does a business model last? How long does it retain a competitive advantage? It seems clear that successful business models do not last forever and they must be in an on-going re-definition activity.

This business model dynamicity issue is one of the most serious research gaps to be covered within the current literature. Then, recently some authors (Achtenhagen et al., 2013; Chesbrough, 2010) affirmed that an orientation towards experimenting with and exploiting new business opportunities was the key to cope with dynamicity. In addition, organizations achieving coherence between leadership, culture, and employee commitment are in the first line regarding business models knowledge and, extensively, success. Experimenting is directly linked to innovation, which is of great importance when aimed to develop a sustained business model. In addition, coherence is sometimes difficult to maintain, as new business models or the re-definition of current ones might involve conflicts, as they lead to paradoxical strategies together with contradictory tensions. Those are called complex business models and can only be successfully dealt with appropriate leadership and management (Smith et al., 2010; Chang and Hughes, 2012). But what is it innovation? How can innovation be brought to an existing business model? Innovation is directly linked to the dynamic nature of the business model, as when

looking for new improvements of the current business model, innovation activities must be taken into account. There are multitude of combinations and options when trying to carry out business model innovation activities, i.e. creating/joining to a collaborative network, joining open business innovation initiatives, analyzing inner characteristics (governance, system, structure, etc), but there is not a general rule that will tell, in advance and based on a holistic approach, what business model innovation practice is appropriate for a specific organization (Baden-Fuller and Morgan, 2010).

Most of the developed literature studies and advances focus mostly on large firms, then: what happens with the SMEs? It is widely accepted that the SMEs have got less resources to innovate than larger firms but it has been demonstrated that SMEs are better regarding radical innovation due to its higher flexibility (Boons and Lüdeke-Freund, 2013). There are only a few and limited frameworks that show and demonstrate how and to what extent business models innovation will bring benefits to SMEs.

On the other hand, open innovation is commonly seen as the ideal approach in order to foster innovation and, extensively, BMI among organisations. Open innovation (Chesbrough, 2003) allows to organizations to complement their internal structure of knowledge with the actives from other organizations with which these are cooperating. This process result into a better degree of flexibility, learning and, as an output, innovation (Ritter y Gemünden, 2003). Although many of the current studies of open innovation suggest its advantages (Escribano et al., 2009), there are few works that highlight its potential disadvantages. Laursen and Salter (2006) point out that an excess of aperture in the innovation, in other words, the number of external knowledge sources in which the organisation focuses on (suppliers, customers, distributors, etc) may lead to decrease the innovation result, as a consequence of the resources limit and projects in which the organization can participate. Additionally, Laursen and Salter (2014) affirm that open innovation presents a problem, as it is possible that due to a higher exposition of the organization to new ideas coming from the innovation, this may lead to the organisation to not capture the returns of the innovation. Therefore, innovation requires of a degree of openness to external knowledge sources and ideas but the commercialisation of the innovative output needs protection and sometimes a guidance process. The “fear effect” of non-achieving the return of the investments lead to intern more instead of opening to new ideas is one of the problems to be overcome. A guidance process that will advise to organisations according to their main characteristics (as opposite to let the organizations inside the open innovation space to find their place) is still needed and recommendable.

Additionally, how is BMI measured and managed? How do know organisation whether they are achieving their results? The usage of traditional Performance Measurement Systems (PMS) such as the BsC (Kaplan and Norton, 1992), Neely’s Prism (1999) or the Strategic Maps (Kaplan and Norton, 2000) is not adequate to manage BMI because they need real data to feed the performance indicators defined within the PMS and BMI needs time to produce, collect, analyse and make decision with these data. A solid and coherent PMS, which would include the

capability of generating business scenarios for the early stages of BMI would overcome this problem (Rodriguez-Rodriguez et al., 2010).

B-MINE not only gathers all these open research gaps but also develops a framework and additional technological tools that will make BMI practices easier, more accessible and more effective and successful for organizations. B-MINE will offer guidance and will recommend, based on the main characteristics of the organisations, whether to carry out any BMI activity or not, what the initial success probabilities are and what the expecting results associated to this BMI are.

Main outcomes

In order to achieve the previously stated objectives with the development of B-MINE, the following major outcomes are planned. These outcomes state, from a determined and concrete perspective, the main results derived from B-MINE as well as they illustrate the approach that will be followed.

Outcome 1.- Business model innovation casuistic

It is possible to affirm that business model innovation come from setting out and varying different elements such as content, structure, context and governance. As a result of advancing the state-of-the-art this project will not only expand and advance these well-known elements, i.e. by integrating SMEs services/operations into larger companies, but also develop new ones.

On the other hand, when looking for inspirations for business model innovation, it is possible to think of emerging technologies, knowledge transfer, systemic approaches, open innovation or new collaborative business models. B-MINE will properly identify and develop both extensions to the already existing inspirations and new ones to be taken into account, i.e. social innovation, environmental innovations, intangible assets assessment as a source of business model innovation, work place innovations, intrinsic knowledge as a result of interacting with other sectors, living labs, etc.

Besides, it is necessary to think of specific determinants that must be taken into account when dealing with business model innovation, i.e. enterprise's/sector's lifecycle, degree of the innovation aimed/feasible, etc.

From the above-presented multi-dimensional approach it is possible to think in identifying the existing relationships among them in order to better be able to create a true, novel and complete casuistic of business model innovation possibilities. This outcome will help to better understand the degree of importance of each one of these components.

This outcome will be developed within the WP 2 "Generalization of a BMI casuistic" and the research approach will be constructivist, as it analys one. The result of R&D projects in which several partners are currently participating will be also an important input: FINNO (www.preduzetnickiservis.rs), Best Technological Innovation

Outcome 2.- Current and future companies' requirement

Focusing on current and future EU companies' requirements regarding business model innovation, B-MINE will set up concrete actual needs and future trends as a result of real world case results gathering and from conducting sound exploratory studies along the different main EU sectors.

This outcome will be developed within the WP 1 "Business requirements" and the research approach here is qualitative, as it focus on exploratory work.

Outcome 3.- Design and development of the BMINE framework

Based on the two previous outcomes, this project will set up a conceptual framework that will, among others, establish the following topics:

- Customised definition of business model innovation for SMEs and larger EU com
- Main –present and future-
- Business model innovation metrics.
- Business framework and methodological guideline to create a EU business model innovation ecosystem.
- Within this framework, EU companies will be able to carry out business model innovation activities/practices under different approaches, according to their needs and aims, as it is shown in the next outcomes.

This outcome will be developed within the WP 3 "European BMI framework", and it will be supported by the knowledge created in the WP1 and 2.

Outcome 4.- Open innovation space

Here companies will have available an open space to get in contact with other companies in order to improve their current business models, i.e. by sharing business model innovation experiences, find new collaborative partners or looking for success cases. Special emphasis should be put on facilitating new mechanisms and tools to facilitate the integration of SMEs operations within larger companies in order to reach better results. Additionally, specific guidance will be offered in order to capture the whole effect of innovation activities.

This outcome will be developed within the WP 3 "B-MINE framework".

Outcome 5.- Business model innovation reference models

This outcome will set up some standards (best practices, lessons learned, business model innovation Balanced Scorecard) aimed to be a guide for companies at both the cluster and the sector level regarding business model innovation. Then, companies from the same sector will benefit from past experiences and will also be able to compare their current performance at the business model innovation context. Mechanisms that assure knowledge transfer to other sectors (beyond the technological transfer), as gathered in Outcomes 1 and 2, will be incorporated.

This outcome will be developed within the WP 3 "B-MINE framework".

Outcome 6.- Value/Risk business model innovation analysis

This outcome will provide to companies with a sound, coherent and multi-disciplinary Value/Risk analysis, which will output whether a certain company should change its business innovation model, to which one and the theoretical success probability or not. For doing this, lot

of information –both endogenous and exogenous- will be processed and assessed from different perspectives, i.e. company structure, leadership, technological capabilities, etc. The idea is to obtain a preliminary business model innovation potential analysis and, based on the scenarios defined in the Outcome 7, being able to classify the company’s capabilities in the context of business model innovation.

This outcome will be developed within the WP 3 “B-MINE framework”.

Outcome 7.- Quantitative business model innovation performance management system

When a company decides to trigger a business model innovation, nobody knows whether it will success or not. For this reason, it important to detect in early phases what the performance associated to the business model innovation is. Then, specific performance measures will be defined at experimentation stages, whose results will provide to decision-makers with additional information to monitor their evolution and decide whether to carry on with the applied business model innovation or not. Additionally, it will be possible to design internal business scenarios based on the results achieved by these measure associated to the business model innovation.

Besides, quantitative tools and mechanisms will be defined in order to objectively link business performance and business model innovation results. Up to now all the tools used for this matter are of subjective nature, which makes that the decisions made are based on subjective opinions and value judgements.

This outcome will be developed within the WP 3 “B-MINE framework”.

Outcome 8.- B-MINE platform

The B-MINE framework has to be presented and technologically supported by an-easy-to-use tool. This might be accomplished with the design, development and implementation of a technological platform. Users will previously register in order to login into the platform. Within the registering process, users will have to provide sensible information about their company. The learning process of how to use the technological platform, as well as the presenting of results will be made following a Serious Game approach, as developed in the next outcome. This outcome will be developed within the WP 4 “Collaboration Platform”.

Outcome 9.- Serious Games for European business model innovation

The reason of taking this Serious Games approach is because it will allow to companies to have an easy-tool to use. With this tool, companies will be able to provide the data and information required, receive the information of the advised innovation- as a result of the risk/value analysis-, graphically see the results of experimentation, establishing a company/sectorial innovation ranking and presenting it like a game, etc.

This outcome will be developed within the WP 5 “Serious Games “.

Outcome 10.- Pilots validation and enrichment

It has been thought to develop at least 10 pilots involving different sectors such as manufacturing, ICT, consulting services, etc. At least 7 SMEs will be selected to carry out the pilots. The finality of this pilots are to check that the developed methodologies, tools and mechanisms work in a near real business environment.

This outcome will be developed within the WP 6 “Evaluation and demonstration” and it will follow a demonstrating approach.

Outcome 11.- Coverage and dissemination of results

This project has got a highly ambitious aim in terms of dissemination and coverage of EU companies. For this reason, it has been thought to contact and collaborate with already existing EU innovation networks including within the Business Innovation Observatory, i.e. “Europe INNOVA Cluster Innovation Platform”, “European Workplace Innovation Network”, “Pro INNO Europe”, etc. Additionally, workshops (online and onsite), training, coaching and mentoring activities (online and onsite), as well as the collaboration with national-based companies associations has been thought. Although it will be deeper developed later on it is necessary to point out that this consortium counts with the potential to reach, from an internal point of view, 650.000 EU enterprises. This fact, together with the cluster approach taken in B-MINE makes that more feasible to reach the challenge of reaching 2 millions SMEs.

This outcome will be developed within the WP 8 “Exploitation and dissemination”.

Ambition

B-MINE aims to become a widely known and used approach in the BMI field, becoming an standard and contributing to unlock the organizations’ BMI capabilities, which would lead to more effective, sustainable and profitable organizations.

In this sense, B-MINE will meaningfully advance the current state-of-the-art in many ways, as it will create new knowledge in the several BMI angles that it covers. B-MINE will mainly produce the 11 outputs above presented. From these, it is possible to affirm that many of them are innovative and will, both individually and together move the current BMI knowledge beyond its current situation:

- O1.- Developing the current BMI elements (content, structure, context and governance) and anticipating new ones.
- O5.- With the values and results obtained it will be possible to establish BMI reference models that will allow to compare the current values of a cluster, sector or individual enterprise in terms of current performance at the business model innovation context.
- O6.- With the Value/Risk analysis organizations will know in advance their success probability and over which area apply BMI and even what innovation would better fit with their characteristics.
- O7.- Linking together business performance and business model innovation results from an objective perspective, as well as the definition of specific performance measures and internal business scenarios.
- O9.- The development of specific Serious Games for BMI in the context of training is innovative.

Project idea No.5 – ACTIVO (Actions to increase innovation and technological transfer in the Vojvodina) linked to the topic No.5 - Support to and internationalization of business of VMC members

Theme of the project:

The project ACTIVO aims at contributing to “set up exchange and co-ordination mechanisms for research, technology and innovation approaches and policies (governance aspects) and to increase public awareness on the importance of technological progress by trans-national actions in the area (awareness aspects).

Short description of the partner’s role inside the project :

The role of University of Udine would be:

1. Best practice sharing – explaining criteria fulfillment in terms of product quality in order to become eligible Italian subcontractor
2. Transfer of know-how;
3. Advisory on services provided by the Laboratory
4. Standard compliance

Main objectives of the project:

1. To foster the competitiveness of Vojvodina metal sector enterprises on international markets and Italian-Serbian collaboration on research and innovation, through targeted support in accession related aspects of their development (achieving compliance in manufacturing processes with EU environmental standards and occupational safety & health (OSH) requirements, introducing QMS, GLP and GMP, increasing energy efficiency, enhancing the capacity of research and development), promoting the sustainable development of growth potential SMEs.
2. To create mechanisms oriented to VMC SMEs to support their RDI capacity to improve their competitiveness also developing high added quality innovative products.
3. To strengthen the cooperation among Italian (FVG) and Serbian (Vojvodina) enterprises, industry clusters, research and innovation centres, technology transfer centres and public bodies in order to foster innovation and technology transfer policies/know-how and to attract investments for innovative and high-tech SMEs and creating long lasting Italian-Serbian enterprises commercial cooperation
4. Awareness raising - government

Main activities of the project:

1. Seminars and workshops, research, best practice exchange, training, study visits. (achieving compliance in manufacturing processes with EU environmental standards and occupational safety & health (OSH) requirements, introducing QMS, GLP and GMP, increasing energy efficiency, enhancing the capacity of research and development)
 - 2.1 Created policy or financial or methodological instruments/tools to support RDI capacity of SMEs.
 - 2.2 Suggested activities - Identifying sectors where SMEs have less RDI capacity, mainly with regards to female entrepreneurs.

2.3 Implementing actions aimed at promoting RDI learning, diffusion and absorption of knowledge in SMEs in different sectors.

3.1 Recording of all experienced practitioners/stakeholders in the territories involved, identifying their activities and competence areas, in order to identify among which is feasible to define commitments.

3.2 Organization of high-level meetings/conferences between practitioners/stakeholders in the same sector to facilitate dialogue on RDI issues and development of Smart specialization and open data.

3.3 Creating durable opportunities ('real' and/or 'virtual') to give to practitioners/stakeholders to dialogue among them and with the policy makers.

4.1 Develop and implement public awareness campaigns aimed at promoting innovation and competitiveness in business at the local level.

Activity No.9: Conducting training on innovation for 40 members

The purpose of the training for innovation was to provide VMC members with contemporary approach to innovations and identify members of their staff that have the capacity to provide this kind of contribution. The training contained relevant innovation topics custom made to metal sector needs. As a result, 5 best innovative ideas were identified. Please find attached the presentations and materials used. One of the subject was also focus on the Call for Proposals "Cluster facilitated projects for new industrial chains" and the details can be found on the <http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2350-innosup-1-2015.html>. The CfP challenge is to develop new cross-sectoral industrial value chains across the EU, by building upon the innovation potential of SMEs.

One of the key problems the project team has faced during the project implementation was to find appropriate dates and get approval from company CEOs for 40 people to participate. As a solution to this challenge, we have decided to organize several regional events with less people, and same training curriculum. The trainings were on the following dates:

11/11/2014 Zabalj – There were 5 representatives of the companies VMC members, two representatives of the business support organization and representatives of the local government. Material used at the training was focused on HORIZON 2020 in general, the importance of ICT in H2020 and SME instrument which is crucial for VMC members. The attendees were introduced to EU funding and support for innovation projects that will help them grow and expand their activities into other countries – in Europe and beyond. Ideas that were initiated by the attendees were related to ICT software (SME competitiveness increasing support).

R.br	Name and surname	Company	Place & Date	Skills gained
1.	Anja Gečevska	VOS-SYSTEM	Zabalj, 11-Nov-2014	
2.	Mirjana Blažević	FSD	Zabalj, 11-Nov-2014	
3.	Suzana Grlić	RADIJATOR	Zabalj, 11-Nov-2014	
4.	Zorica Kurucin	OPSTINA TITEL	Zabalj, 11-Nov-2014	
5.	Zora Petrović	OPSTINA TITEL	Zabalj, 11-Nov-2014	
6.	Zoran Pekez	VMC	Zabalj,	

			11-Nov-2014	
7.	Bojan Popović	KIZIC METAL	Zabalj, 11-Nov-2014	
8.	Nenad Trkulja	TEHNORADIONICA	Zabalj, 11-Nov-2014	
9.	Vladimir Biljnja	AGENCIJA ZA RAZVOJ TEMERIN	Zabalj, 11-Nov-2014	

12/11/2014 Indjija – There were 6 representatives of the companies, VMC members, and the representative of the Faculty of Technical Sciences as an R&D institution. The material used and introduction made were the same (HORIZON 2020 in general, the importance of ICT in H2020 and SME instrument). The attendees were introduced to production programme and capacities available by Metal Cinkara, Indjija. Ideas that were initiated by the attendees were in relation to waste management and environmental issues: reuse and remanufacturing technologies and equipment for sustainable product lifecycle management and modern technology for utilisation of hazardous waste and energy production.

R.br	Name and surname	Company	Place & Date	Skills gained
1.	Ljubiša Radenović	CASTING TRADE	Indjija, 12-11-2014	
2.	Aleksandra Božić	GUMIL KOMERC	Indjija, 12-11-2014	
3.	Milorad Ustić	METAL CINKARA	Indjija, 12-11-2014	
4.	Zoran Pekez	VMC	Indjija, 12-11-2014	
5.	Zlatibor Kovjanić	UTVA M.P.	Indjija, 12-11-2014	
6.	Perica Antović	UTVA	Indjija, 12-11-2014	
7.	Mirjana R. Ratković	VMC	Indjija, 12-11-2014	
8.	Dragomir Subić	SUBIC CONSALTING	Indjija, 12-11-2014	
9.	Slobodan Morača	FTN	Indjija, 12-11-2014	

13/11/2014 Pancevo – There were 9 representatives of the companies, VMC members, VMC management, the representative of the Faculty of Technical Sciences as an R&D institution, provincial government and business support organization (Chamber of Commerce). The material used and introduction made were the same (HORIZON 2020 in general, the importance of ICT in H2020 and SME instrument). Ideas that were initiated by the attendees were in relation to Development of infrastructure for the support of improvement, mutual action and making of the international market for SME products and services and capacity building in SME for agile manufacturing in the cluster environment.

R.br	Name and surname	Company	Place & Date	Skills gained
1.	Dragomir Subić	SHIPYARD BOMEX	Pancevo, 13-Nov-2014	
2.	Antonije Vuletić	FARMAKOM	Pancevo, 13-Nov-2014	
3.	Ljubomir Aleksić	PS za PRIVREDU	Pancevo, 13-Nov-2014	
4.	Slobodan Morača	FTN	Pancevo, 13-Nov-2014	
5.	Mirjana R. Ratković	VMC	Pancevo, 13-Nov-2014	
6.	Zoran Pekez	VMC	Pancevo, 13-Nov-2014	
7.	Milorad Ustić		Pancevo,	

			13-Nov-2014	
8.	Ljubiša Radenović	CASTING-TRADE	Pancevo, 13-Nov-2014	
9.	Savo Krstić	UTVA SILOSI	Pancevo, 13-Nov-2014	
10.	Isidor Rajkov	SIM	Pancevo, 13-Nov-2014	
11.	Nikola Egić	BOZIC I SINOVI	Pancevo, 13-Nov-2014	
12.	Ljupko Todorović	TODOR-COLOR	Pancevo, 13-Nov-2014	
13.	Zlatibor Kovjanić	UTVA M.P.	Pancevo, 13-Nov-2014	
14.	Zoran Virić	RPK PANCEVO	Pancevo, 13-Nov-2014	

The responsibility for this activity lay on Expert for export and innovation.

Activity No.10: Promotion of improved VMC services

Temerin, 10 December, 2014 – Vojvodina Metal Cluster organized an event Business club mostly for the members of the cluster in order to promote improved VMC services and USAID support. There were discussed VMC CRM software - purpose, advantages, and instructions on how to use. Annexes: Invitation, list of attendees, agenda and photographs.

In addition, we designed and produced leaflet distributed to VMC members and partners, giving basic information on the project, newly developed service and activities carried out during 1-year-period. At the end, we have designed VMC catalogue of improved services.

All activities we carried out related to the project implementation were posted on official VMC website regularly.

Report submitted by:

Zoran Pekez

Project manager