

Mehinović Hamid, MSc¹
E-mail: h.mehinovic@westport.ba

Mujezin Hamdija, MSc²
E-mail: h.mujezin@energis.ba

Osman Lindov, PhD³
E-mail: olindov@gmail.com

¹ Westport Consulting d.o.o. Sarajevo
Obala Kulina bana 4, Sarajevo, BiH

² Association - Center for Education and Raising Awareness of Energy Efficiency – Energis
Obala Kulina bana 4, Sarajevo, BiH

³ Faculty of Traffic and Communications University of Sarajevo
Zmaja od Bosne 8, Sarajevo, BiH

ENHANCING COMPETITIVENESS AND INNOVATION IN THE GREEN AND SMART MOBILITY

Key Words

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Abstract

Accelerated urbanization, technological development and raise in awareness of man-made impact on the environment evoked the need for greener and smarter mobility in urban areas all over the world. While green and smart industry is growing worldwide, small and medium enterprises (SMEs) in the green and smart mobility sector (GSM) in Bosnia and Herzegovina's are struggling to be competitive and innovative. Primarily due to the lack of systematic support. This paper focuses on the analysis of the needs of GSM industry in BiH in field of market intelligence, business-to-business matching and public funding screening, developed and tested pilot services. Lessons learned are presented and recommendation for future steps are proposed in order to provide the needed support for the development, innovation and competitiveness of the GSM sector in BiH.

1. INTRODUCTION

Contemporary development and the growth in the number of inhabitants in major cities of Bosnia and Herzegovina (BiH) (i.e. Sarajevo, Banja Luka, Tuzla, Zenica,

Bijeljina) with the tendency of creating one urban area, have brought a number of demands for increased mobility and more efficient provision of transport services. There is a need to utilize sophisticated and innovative methods, techniques and technologies when it comes to the organization of urban transport.

The ongoing debate with regards to transport and the environment is paradoxical. On one hand, transport activities support increasing demand for mobility of passengers and goods, especially in urban areas. Whereas, on the other hand, transport activities manifested in increased motorization and congestion in traffic. As a result of this, the transport sector is becoming more and more related to environmental issues. With technologies that are almost completely based on the use of oil and its derivatives, as well as internal combustion engines, the impact of transport on environmental (ecological) systems has increased. In recent years, this has reached a point where spatial accumulation of transport is the dominant factor behind the emission of most pollutants and its environmental impacts.

As a solution to these evident problems, the concept of Green and Smart Mobility (GSM) has been proposed which is in line with European Union ambitious climate and environmental policy whose implementation can transform modern cities economically, socially and environmentally, and support formation of smart cities. Green and smart mobility includes transport services and technologies (vehicles and components, computer applications, clean fuels, infrastructure, etc.) aiming to improve the mobility of people and goods and to reduce its environmental impacts. It concerns different sectors (i.e. transport and logistics, automotive, information technology, energy, etc.). It is developing quickly as a result of technological change but also in response to the growing need of reducing the environmental impacts of transport in the context of more and more restrictive environmental policies.

This concept has been rapidly growing all around the world, while in Bosnia and Herzegovina lacks fundamental business support to achieve noticeable growth. Therefore, the progress has been slow. Having that in mind, this paper is focused on the analysis of needs of the GSM industry in BIH in field of market intelligence, business-to-business (B2B) matching and public funding screening, developing and testing pilot services for GSM SMEs. Lessons learned are presented and recommendation for future steps are elaborated and proposed in order to provide the needed support for the development, innovation and competitiveness of the GSM sector in BIH. Following the introductory part, the theoretical background and methodological framework of this paper are presented. Finally, the results of the implemented activities are analyzed, important conclusions drawn, and suggestions for future steps provided.

2. THEORETICAL BACKGROUND

2.1. Green and Smart Mobility

Urban mobility that is smart – and green in consequence – is referred to as GSM and – in the light of the definitions provided by Lyons [1]; Bąk Makolska-Tenold [2];

Chon and Lee [3]; WBCSD [4]; ECMT [5]; and Manville et al. [6] – is defined as a mobility system that performs efficiently with the aid of new technologies and to the benefit of all economic, social and environmental aspects. In other words, a mobility system that supports growth and development, equity and inclusiveness, and sustainability and nature preservation, all at once. By being multi-faceted, GSM facilitates efficiency in all terms of lower costs, reduced emissions and improved services. Although green is included in smart, the GSM term is preferred to the others (or new ones) as it stresses the importance of both research (and practice) streams and makes the meaning of the concept clearer.

GSM targets and succeeds in reducing the environmental impact of transportation by maximizing its efficiency, speed and intelligence. This is facilitated by reducing the amount of travelling, boosting modal shift, and minimizing the length of trips. Consequently, GSM manages to decrease certain mobility constraints and minimizes traffic-related risks and aggravating factors (i.e. accidents, noise, smog), reduce the effect of time and land loss, and to create broad economic and societal benefits (i.e. livability, health and safety improvements, equal opportunities) [7] and [2]. Based on our screening of the market actors, within the project, we classified GSM SMEs into eight groups according to their primary activity:

- Transport Infrastructure / Infrastructure Technologies,
- Environmentally Acceptable (Clean) Fuels,
- Low Carbon Economy,
- Green / Eco-Friendly or Clean Vehicles,
- Intelligent Transport Systems (ITs),
- Cooperative ITs (C-ITs),
- Mobility as a Service (MaaS) Or Transport as a Service (TaaS),
- Automated Vehicles,
- Planning and Education in Mobility.

2.1. Business Support Services

In order to achieve such sustainable solutions efficiently, the need for a supportive network becomes apparent and requires the participation of actors that are active in different green and smart mobility sectors and areas of application. This supportive network should include services that can improve the GSM industry performances and enable its growth, in terms of market intelligence, B2B matching and access to public funding, which are defined below.

Market Intelligence is a term that is used to describe the “holistic collection of internal and external business environmental data, by a business, which is to be used to make decisions on the viability of the current business market” [8]. Kohli and Jawoski [9] identified three core marketing intelligence processes:

- Marketing intelligence generation refers to finding the customer needs and market defining factors (i.e. regulation, technology, competitors, environmental forces, etc.).

- Marketing intelligence dissemination refers to the diffusion of the aforesaid information to the organization (or the network) for analysis, and finally
- Market responsiveness refers to the actions taken after analyzing the gathered information.

B2B Matching is “the process in which agents, representing traders that are interested in having exchange of economic value are put in contact with potential counterparts to negotiate” [10]. In other words, it is a usual marketing tactic that matches companies together on a basis of their needs, strategies, and organizational philosophy. There are several forms of B2B matching that range from employing intermediaries and agents, to large gatherings, and online applications/services. The two most important forms are B2B trade fairs and online B2B matching services [11].

Public Funding Screening is a term that describes every process with a view to assess the potential existence of available public funding opportunities and initiatives [12]. In this particular case, public funding screening refers to monitoring of relevant EU and national programs and funds. Public funding screening must not be viewed and understood only in purely financial terms, but every potential intervention must be viewed holistically and within a more general perspective [13] to generate long-term and sustainable outcomes [14].

Under the light of the discussed literature and the proposed definitions, and in understanding the GSM in depth, a look at the business support concept’s practical nature is deemed as important. In doing so, the following research questions have been developed:

1. What are the needs of “Green and Smart Mobility Industry” in BIH?
2. How can business support accelerate the growth of “Green and Smart Mobility Industry” in BIH?
3. What are the future steps for the development of “Green and Smart Mobility Industry” in BIH?

3. METHODOLOGICAL APPROACH

By answering the aforementioned question, a research methodology was employed based on this paper for the following steps:

- Market analysis which included a survey of the GSM SMEs needs, requests, obstacles, and their capacities for innovation and enhancing competitiveness,
- Development and testing of three pilot services for market intelligence, B2B matching and public funding screening,
- Analysis of results and evaluation of pilot services impact on SMEs,
- Defining future steps for enhancing the GSM industry in BIH.

4. GSM MARKET ANALYSIS

The market analysis survey was conducted on a sample of 21 SMEs from Bosnia and Herzegovina, mostly based in the wider Sarajevo region, who answered in

detail and concrete 28 questions for the purpose of defining innovative capacities, potentials and developmental needs in terms of market intelligence, B2B networking and access and usage of funds, and assessing their readiness to test out new pilot services that could help out their development and growth.

The 21 SMEs that filled out the questionnaire pointed to the fact that BIH possesses (albeit undeveloped) GSM industry, and that the market is dominated by small enterprises with less than 250 employees who are majority (83%) on the market for over 5 years. Also, the survey indicated that companies are targeting a small number of workers to green and smart mobility - an average of less than 35% working in the before mentioned GSM sectors, which is also the main basis for the recorded low average growth rate of companies below 15%.

Concerning the market intelligence, B2B networking and access and usage of funds, the survey showed that:

- 80% of companies do not analyse their position compared to other companies in the market,
- 76% do not use services, programs or market data sources or market analysis,
- 71% of companies are not familiar with the available B2B events within the region and the EU,
- Companies rarely participate in B2B events, the main reason/goal for their participation is mostly to find new costumers or place a product on a foreign market,
- Key parameter for decision making on participation is magnitude of the event and number of participants,
- 76% of companies are not familiar with available grants or loans within the EU and the region,
- 81% of companies do not use sources of grant or credit information and calls within the EU and the region,
- 76% of companies do not possess the needed knowledge to apply for EU and regional calls for funds and projects,
- All of the SMEs are willing to test and see the need for development of new business services that could help them be more competitive and innovative.

5. ENHANCING GSM INDUSTRY IN BIH

Based on the above listed findings of SMEs survey in the GSM sector, three pilot services were developed:

1. Market Intelligence Readiness Level tool – as market intelligence service,
2. Handbook for application to EU funds – as public funding screening service,
3. Handbook for B2B events – as B2B matching service.

The tool for market intelligence readiness level (MIRL) had an objective to allow SMEs evaluate its potential position on other markets, customers or the competition and provide help in making sound business decisions which will allow them embrace new market opportunities. The tool is based on calculating market intelligence indexes, using well-known models for the level of readiness and helps

SMEs to determine the level of technical, non-purpose, production, and commercial maturity. The market intelligence service was tested with three companies that are working in the fields of green vehicles and information communication technologies (ICT) and have shown potential and ambition to expand their markets. The companies perceived the tool as a valuable asset in determining their weak points and enabled them to improve their business and make it ready for entering the new markets. Using the tool, two of these three companies, reshaped their business and adapted it to the needs of BIH regional market, and have successfully positioned themselves as leaders in producing green and smart mobility solution in the region.

Handbook for applying to EU funds [15] was prepared with the goal of distributing the information on availability and conditions for applying to EU funds to help fund the innovative projects in GSM sector. The handbook included a list of available EU funds, identification and detailed information of most relevant EU funds (relevance for each GSM sector, general information about the call, conditions for applying, etc.) and provided advice for the further application process and screening of new funding opportunities. The pilot service was tested on nine companies, with low or none experience in applying to EU funds. Seven companies provided feedback that after receiving information about the available funds, they have applied for funding of their new innovative projects that will bring new GSM products and services to BIH market.

The Handbook on B2B events [16] aimed to assist SMEs in the following segments:

- organizing B2B events targeting a specific sector with green and smart mobility,
- participation in a regional / national / international B2B event,
- promoting networking activities with other relevant clusters / networks,
- identification of joint actions / services for setting up a regional network / association / cluster in the green and smart mobility sector.

The handbook contained information such as regional / international meetings, web addresses of events, contact information's, programs and objectives of the events, obligations of the participants, form of participation, funding models, types of participants and benefits that they can gain from going to that specific event. This kind of B2B service, as was proven through testing with 15 SMEs, and cooperation and communication between companies helps in the development of cooperation, experience and knowledge sharing in the fields of technology and product development, therefore represents one of the necessary first steps in BIH to help and support the development of GSM industry. Eleven out of the 15 companies used the handbook as the tool that helped them decide to participate in EU fairs and conferences, emphasizing that the participation helped them form new partnerships that will for sure enable their growth and make them competitive with the traditional and highly polluting mobility product and service providers.

6. CONCLUSIONS AND FUTURE STEPS

From the activities undertaken and presented in this paper, we can conclude that the state of the GSM sector in Bosnia and Herzegovina is unregulated, and that there is a high potential for further improvements. The companies lack business support to help them overcome the barriers to accessing the markets and implementing their innovative solutions for enabling green and smart mobility in BiH.

The above presented pilot services have shown that even simple actions, such as improving the information flow can have high influence on business development. The greatest potential can be found in enabling access to project financing, where GSM SMEs can use available EU funds to develop new services and products and enhance their development, while at the same time supporting the development of Bosnia and Herzegovina's society and Sarajevo as a future green and smart city.

However, actions such as these, can be seen just as first step towards enhancing competitiveness and innovation of GSM in BiH. For further and more noticeable growth, it is necessary to further invest into development of business support services and gain institutional financial and regulatory support, as the lack of interior funds of the GSM SMEs in BiH makes it harder to penetrate new markets and bring innovative ideas to implementation phase. Only with this kind of support can the green and smart mobility industry achieve its potential and directly support the development of smart cities in BiH.

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