

# International cooperation of the City of Skopje: Projects for accelerating smart city developments

Branko DIMESKI

*St. Kliment Ohridski University - Faculty of Law, Rudnicka bb, Kicevo, Macedonia*  
[dimeskibranko@yahoo.com](mailto:dimeskibranko@yahoo.com)

Memet MEMETI

*South East European University, Faculty of Contemporary Social Sciences, Tetovo, Macedonia*

Mimoza BOGDANOSKA - JOVANOVSKA

*St. Kliment Ohridski University – Faculty of Information and Communication Technology, Bitola, Macedonia*

## Abstract

During the 21<sup>st</sup> century, we are witnessing a very dynamic international activity of the cities around the globe. The effect of globalization accelerates the overall processes of international cooperation between the cities and the scope of network development between the cities it goes behind the limits. In this highly dynamic and growing environment, the City of Skopje especially in recent years is very active in the field of international cooperation with other cities in many aspects of societal life while promoting the concept of smart city development. Thus, the main objectives of the paper are directed towards examining the scope of international cooperation of the City of Skopje in the light of numerous international projects for strengthening the cities performances and improving the lives of the city residents. Regarding the scope of the research, the paper mainly builds on the research that already exists in the literature as well as various reports and experiences that were noted in the past. Consequently, the methods of observation and content analysis of the international project cooperation of the City of Skopje as a case study are considered. The research results point to very intensive international smart city cooperation of the City of Skopje with many cities around the globe in many aspects of the human life. The results of the research can serve as a great source of very important data on smart city concept of the City of Skopje for both academicians and researchers i.e. practitioners. The research in the paper impose a great value for any other same or similar research in the future by concluding that the City of Skopje is very active in promoting the concept of smart city development in the field of energy, transportation, pollution and air quality, local economic development etc.

**Keywords:** City of Skopje, development, international projects, smart city.

## 1. Introduction

In today's process of worldwide globalization, the international mutual cooperation of the cities around the world is inevitable process. The international cooperation between cities can take many different forms such as "sister cities", protocol/programme cooperation, bilateral agreements, official contacts, joint project/s development and implementation etc.

However, most of the mutual cooperation is based on international calls for some type of cooperation between cities under the sponsorship or financial arrangements by some international funds provided by the international organizations (in Europe one of the mostly known are EU funds, i.e. European Union's Horizon 2020, European Commission Grants, Europe for Citizens Programme- 2.2 Networks of Towns, European Union within the Directorate-General of the European Commission Humanitarian Aid and Civil Protection (ECHO), Europe for Citizens Programme- Action 1: Active Citizens for Europe- Measure 1.2. Thematic Networking of Twinned Cities, European Union FP7

Program, DG Research under the 7FP Programme, EU- Civitas Renaissance Initiative, Research Executive Agency- other EU research grants for urban development etc.).

In the last two and a half decades or from the beginnings of 1990s from the last century until today, the concept of so-called smart city development is a concept that is put high on the research agenda. It is a concept that has no single definition and the goals of the research or goals of project implementation in every particular case give some common sense of what is smart city development. In the recent years the concept is a base of the international cooperation between cities and financing smart city projects implemented by the city/s on international cross-country level is one of the great priorities of the EU funds in the presence and in the future.

In recent years (especially during the last 15 years), the Macedonian's capital Skopje is very dynamic in maintaining and extending the international cooperation with other cities in the world. Judging by the number or the scope of international relations, the City of Skopje fully qualifies to be called an "Open" city. Until today, the City is already in "sister" relations with a total of 20 cities around the globe i.e. cities from 16 countries. In addition, with 9 cities from 8 countries had already concluded some protocol & cooperation program.

Finally, with 17 cities from 12 countries the mutual cooperation was based on established other different types of contact. The City of Skopje already participated (and still participating) in a total of 20 international smart city projects in the network with other cities, regions, universities and other institutions mainly from the Balkans and rest of Europe. The smart cities projects are in a number of professional fields, such as energy, mobility, ICT development, cultural heritage, education and training, civic involvement and commitment to the decision-making processes, climate change and air pollution, urban transport, urban planning and development etc.

In the following sections of the paper we will give a brief overview of the historical development and hierarchical/departamental organization as well as public enterprises and programs of the City of Skopje. Next, the international cooperation is analyzed with an accent on smart city projects of the City of Skopje. Finally, the paper gives an overview of each smart city project, such as area/s of intervention, participants, total cost, the effects of the project implementation etc.

## **2. The historical development and present organization of the City of Skopje**

### ***2.1. A brief history***

As a Macedonian capital, the City of Skopje is the largest city in the country with a population of almost 550 000 inhabitants according the population data estimates from 2015. In other words, almost one-third of the country's total population of nearly 2 million people live and work in Skopje, making it the largest and most important administrative, political, economic, social and cultural center in the country. From the historical data it is known that during the Ancient and Roman period the city was known under the name *Scupi*.

The city of Skopje is located in the southwestern part of the Balkan peninsula, on the course of Vardar River in the northern part of the Republic of Macedonia. It lies on very important geostrategical route linking Athens and Belgrade. It is one of the greatest industrial center integrating the textile, chemical, printing industries etc. At the same time, it is country's biggest center of trade, transportation, banking as well as culture and sport development [1].

According to the historical data, Skopje was inhabited at least 4000 BC. During the second century BC, the city was named capital of Dardania. However, after three centuries or in the 1st century AD, the city was conquered by the Romans. After the Roman Empire was divided, Skopje fell under the Byzantine rule. However, during the following centuries Skopje had been a subject of permanent struggle for power between Byzantines and Bulgarians. Even from 972 until 992, Skopje served as a capital of the Bulgarian Empire.

In the 13th century AD or more precisely in 1282, Skopje fell under the rule of the Serbian Empire. From 1346 to 1392, Skopje also served as a capital city but now for the Serbian Empire. However, in 1392 the city fell under the Ottoman rule and still served as a capital city, but now to the so-called Vilayet of Kosovo. The city stayed under the Ottoman rule for more than 500 years. But, again in 1912 during the Balkan Wars, Skopje fell again under the Serbian rule by the Kingdom of Serbia [1].

During the First World War, the city was occupied by the Bulgarians, but after the war it became an integral part of the Kingdom of Yugoslavia and capital of the so-called Vardarskabanovina. For a second time, during the Second World War, the city was occupied by the Bulgarian fascist army as part of the Axis powers. However, before the end of the war and liberation of the city by the communist partisans, in 1944 the city became a capital of a newly created Democratic Macedonia and Socialist Republic of Macedonia as a federal unit within the newly created Socialist Federal Republic of Yugoslavia [1].

One of the most rapid and tremendous development of the city happened after the war when most parts of the city were re-built in a short period of time. Additionally, Skopje grew rapidly in population size due to migration processes as a result of the growing industrialization and socialization in the society. Skopje became political, economic, industrial, social and cultural epicenter of the newly created Macedonian republic. But, unfortunately, all these processes lasted shortly (less than two decades) when the city in July, 1963 was struck by a powerful earthquake that was very disastrous. Most parts of the city were destroyed and the worldwide call for help resulted in tremendous solidarity by many volunteers, cities and countries in order to re-build again the city buildings and infrastructure. As from the Ancient times, Skopje maintained the status of capital city in the Balkan peninsula, now in 1991 as capital of newly created independent Republic of Macedonia [1].

The City of Skopje is comprised of ethnically and religiously diverse population as it is in almost every big populated place on the Balkans. Of the total population, almost two-thirds or 66% are residents of ethnic Macedonian origin while Albanians are

approximately 20%, Roma population is approximately 6% etc. In the city, the Macedonians mostly live in the southern parts (south of the Vardar river), while Albanians and Roma population are the residents of the northern part of the city. The northern parts of the city are considered more traditional in terms of way of life and culture. Besides, these parts of the city are considered poorest and there are neighborhoods that are lagging well behind the overall comprehensive and strategic plan for development of the City of Skopje. Also, the population density in these parts of the city is well under the average population density of the city which points out to be under greater migration due to greater unemployment and under-development [1].

## 2.2. Organization of the City of Skopje

The City of Skopje is managed by the Mayor-Council form of local government. The Mayor and the Council-members of the city are elected officials and their term in office is four years. They are elected on free and democratic local elections on four year term. Currently, there are President of the Council and 45 Council-members. Each of them are coming from different political parties and they discuss their political party platforms on the Council meetings.

According to the Law on Local Self-Government from 2002, the City of Skopje has a special status. In addition, according to the subsequent legislature from 2004, the City of Skopje was divided in total of 10 municipalities. Each of these municipalities has its own Mayor and Council, but the policy of the City of Skopje is implemented in all of these 10 municipalities. In other words, for the general matters of these municipalities is responsible the City of Skopje.

The crucial part of the city's management is city administration. At the top of the administration is the General Secretary. Under the General Secretary, there are total of 16 department heads each of them dealing with some aspect of the society. Currently, there are the following city departments: Financial Affairs; Legal Affairs; Local Economic Development- (LED); Spatial Planning and Organization; Communal Affairs; Traffic; Public Activities; Nature and Environment Protection; IT and Modernization; General Affairs; Inspectorate; Internal Audit; Education; Territorial Fire Brigade; Mayor Support; International Cooperation and Cooperation with NGO's and foundations [2] (See Table 1 below).

Table 1. Administration of the City of Skopje

Council		
Mayor		
General Secretary	Departments	Departments
	Financial Affairs	-General Affairs
	-Legal Affairs	-Inspectorate
	-LED	-Internal Audit
	-Spatial Planning and Organization	-Education
DEPARTMENT HEADS	-Communal Affairs	-Territorial Fire Brigade
		-Mayor Support
		-International
	-Traffic	Cooperation and Cooperation
	-Public Activities	with NGO's and Foundations

-Nature and Environment Protection  
 -IT and Modernization

*Source: Administration of the City of Skopje,  
<http://skopje.gov.mk/EN/DesktopDefault.aspx?tabindex=0&tabid=14>,  
 date: 19.11.2018.*

Currently, the City of Skopje has a total of 11 Programs, each of them dealing with a specific area or as a part of the overall comprehensive development of the city. Additionally, the city operates with a total of 5 public enterprises that submit annual programs and reports about the activities that were undertaken by them and the achieved results [3] (See Table 2 below).

Table 2. The City of Skopje programs and public enterprises

	Public Enterprise	Public Program
Public enterprise for parks and greenery	√	
Public enterprise “KomunalnaHigiena”	√	
Public enterprise for water supplying system and sewage	√	
Public enterprise for streets and roads maintenance		
Public enterprise for public transportation	√	
Local economic development (LED)	√	√
Energy efficiency		√
Handmade, trade and catering		√
General tourist propaganda		√
Environment protection		√
Culture		√
NGO's support		√
Social, child and health protection		√
Youth and sport		√
Secondary education		√
Construction and land development		√

*Source: City of Skopje Programs,  
<http://skopje.gov.mk/EN/DesktopDefault.aspx?tabindex=0&tabid=255>,  
 date: 19.11.2018.*

### 3. The concept of smart city development: Basic definitions and characteristics

The concept of smart city emerged as new so-called scientific paradigm at the end of the 20th and at the beginning of the 21st century. In the literature, the first mentions of smart city are in 1992 in order to make a link in their research between urban development, technological innovations and globalization [4]. Later, or more precisely in 2005, the concept was widely supported by many multinational companies in the private sector for business purposes [5].

According to Jovanovska-Bogdanoska and Nechoska-Koltovska[6], smart city is: “a city that monitors and integrates the conditions of its road infrastructure, ensures better optimization of the resources, plans its preventive maintenance activities, and monitors the safety aspects, such as self-monitoring and a self-response system, by using Smart Computing technologies with the purpose of maximizing the services to its citizens in this area” [6].

Deakin and Al Wear [7] point out that there are four factors or conditions that must be satisfied in order to be given a plausible definition about what constitutes smart city. Those are:

- The extensive use of IT technology in cities and community development;
- Great influence of IT technology on improving the life and working conditions in urban places;
- The extensive use of IT by official institutions and government bodies; and
- The so-called territorialisation of IT practices.

In other words, according Deakin [8] the smart city is not just a city that possess IT equipment but also how that equipment is used or implemented in order to be achieved positive results. In addition to previous definitions, there are a number of definitions that from many aspects give some reasonable definition. For example, according Smart Cities Council [9], “A smart city is one that has digital technology embedded across all city functions”. Frost and Sullivan (2014) identified eight basic aspects that characterize smart city. According them, they are: “smart governance, smart energy, smart building, smart mobility, smart infrastructure, smart technology, smart healthcare and smart citizen” [10]. Next, the Department for Business, Innovation and Skills from UK in 2013 points out that the smart city concept cannot be definitely defined. Instead, the concept is a process with series or number of steps that will make one city more flexible in order to respond quickly and to successfully accommodate to the internal and external changes [11].

Probably one of the best comprehensive definition about the smart city features or elements was given by the so-called European smart city model 3.0 (2014). According this definition, there are six major features that one city make smart city. Those are 6 SMARTS: Smart People, Smart Mobility, Smart Living, Smart Economy, Smart Governance, and Smart Environment [12].

It is very interesting to point out that the city intelligence can be present in a number of fields in the society (See Table 3 below).

Table 3. Intelligent city fields

Innovation economy	Urban infrastructure	Governance
- Innovation in industries, clusters, districts of a city	Transport	Administration services to the citizen
- Knowledge workforce: Education and employment	Energy / Utilities	Participatory and direct democracy
- Creation of knowledge-intensive companies	Protection of the environment	Services to the citizen: Quality of life

*Source: Smart City, [https://ipfs.io/ipfs/QmXoyvizjW3WknFiJnKLwHCnL72vedxjQkDDP1mXW06uco/wiki/Smart\\_city.html](https://ipfs.io/ipfs/QmXoyvizjW3WknFiJnKLwHCnL72vedxjQkDDP1mXW06uco/wiki/Smart_city.html), date: 19.11.2018.*

#### 4. International cooperation of the City of Skopje

Through the years, the City of Skopje has established an extensive international cooperation with many cities, towns, enterprises, non-governmental organizations (especially ZELS- Zaednicanaedinicitenalokalnitessamoupravivi or the Association of the Units of Local Self Government), international organizations and associations etc. However, there are three identified general distinctive goals of the international cooperation of the City of Skopje [13]. Those are:

- Promoting and establishing the City of Skopje as Macedonian capital in the “eyes” of the world nations especially EU countries;
- Promoting and further strengthening the city’s positions of national and regional center; and
- To point out the real existence of the clear mission of the City of Skopje as an “Open”city towards its multifaced development.

The international cooperation of the City of Skopje was fully established and further accelerated after the disastrous earthquake in July, 1963 that almost destroyed large parts of the city. After the earthquake, the city was labeled “city of international solidarity” and maintained that global characteristic until present days. Since 1963 the city has established many international contacts and cooperation agreements with many cities and also was very successful in maintaining those relationships through the years and by further concluding new contacts and cooperation agreements [13].

Basically, as any other capital city in the Europe, the international cooperation of the City of Skopje is ongoing on three main ways, such as [13]:

- Twinning;
- Protocol (as a result of previously established so-called program of cooperation);
- Business contacts.

As can be noticed from the Table 4 below, the number of cities that established cooperation with the City of Skopje is really above the expectations. About 20 cities are so-called “sister” cities with Skopje and additionally 50 or more cities until now have established some type of mutual cooperation with Skopje (See Table 4 below).

Table 4. The City of Skopje “sister” cities and cities with established cooperation & contact

“Sister” cities	Protocol Cooperation Program	& Contact
Sarajevo- BIH	Torino- ITA	Nis, Novi Sad-
Bradford- UK	Moscow- RF	SER
Dijon- FRA	Bari- ITA	Rijeka-CRO
Dresden- GER	Ankara- TUR	Sarajevo- BIH
Tempe- USA	Tirana- ALB	Sofia- BUL
Roubaix- FRA	Blagoev-BUL	London- UK
Warreme- BEL	Craiova- ROM	Paris- FRA
Nurnberg -GER	Tashken- UZB	Melbourne-
Chlef- ALG	Uremia- IRA	AUS
Nanchang-CHI		Naples,
Manisa- TUR		Ravenna,

Suez- EGY	Florence- ITA
Pittsburg- USA	Athens,
Istanbul- TUR	Edessa,
Ljubljana- SLO	Thessaloniki-
Podgori- MON	GRE
Zaragoza- SPA	Stockholm-
Zagreb- CRO	SWE
Belgrade- SER	Saratov- RF
Tirana- ALB	Bucharest-
	ROM

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*Source: International Cooperation,  
<http://skopje.gov.mk/EN/DesktopDefault.aspx?tabindex=0&tabid=24>,  
date: 19.11.2018.*

#### **4.1. International smart city projects**

The international cooperation of the City of Skopje is fully marked with cooperation and implementation of a number of smart city projects with other cities in the world mainly financially supported (fully or partly) by a number of EU funds, such as: European Union’s Horizon 2020, European Commission Grants, Europe for Citizens Programme- 2.2 Networks of Towns, European Union within the Directorate-General of the European Commission Humanitarian Aid and Civil Protection (ECHO), Europe for Citizens Programme- Action 1: Active Citizens for Europe- Measure 1.2. Thematic Networking of Twinned Cities, European Union FP7 Program, DG Research under the 7FP Programme, EU- Civitas Renaissance Initiative, Research Executive Agency- EU research grants etc.[14].

As can be seen from Table 4 below, there is a real diversity of the main areas of expertise and implementation of the smart city projects. More precisely, the areas where the City of Skopje was involved (and still involed) in promoting the smart city concept during the years are the following: energy; mobility; ICT development; cultural heritage; education and training; civic involvement and commitment to the decision-making processes; sharing of good practices in urban prevention; climate change and air pollution; urban transport; urban planning and development; food waste collection; street lighting; social and economic growth; communications with the citizens; implementation of innovative concepts; marketing; planning and management; security, interoperability and safety; research [14] (See Table 5 below).

Table 5. The City of Skopje smart city projects

Areas of expertise/implementation	Name of the project	Name of the project
- energy	-MATCHUP	- Ele.C.Tra
- mobility	-ROCK	- CASCADE
- ICT development	-„Creative	- FUPOL
- cultural heritage	Europe"	- NICHES+
- education and training	-EU.CA.NET	- RENAISSANCE
- civic involvement and commitment to the decision-making processes	- EPICURO	- SEENET I and II
- sharing of good practices in urban prevention	- CREATE	- PAMLED
- climate change and air pollution	- SINERGI	- SWEB
	- BIN2GRID	- TRANSPOWER



- urban transport
- urban planning and development
- food waste collection
- street lighting
- social and economic growth
- communications with the citizens
- implementation of innovative concepts
- marketing
- planning and management
- security, interoperability and safety
- research

- SOCIAL CAR - INSEC
- Streetlight-EPC

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*Source: International Projects,  
<http://skopje.gov.mk/EN/DesktopDefault.aspx?tabindex=0&tabid=194>,  
 date: 19.11.2018.*

According to the existing data presented in Table 5, the City of Skopje fully participated in a total of 20 international smart city projects. In the next section of the paper will be given a more detail information about these projects (such as the aims of the project, duration and participating cities). Some of the projects were already implemented and some are still ongoing in the present with the defined duration and deadlines in the future.

#### ***4.2. Scope of international smart city project cooperation: A brief overview of smart city projects of the City of Skopje***

The scope of international smart city project cooperation of the City of Skopje can be described by a number of projects in which the City of Skopje participated in project network together with other cities, regions, universities from other countries worldwide. The so-called MAtchUP is a smart city project in which a total of seven cities are involved i.e. Antalya, Valencia, Herzliya, Dresden, Skopje, Kerava and Ostend. The project pertains to offer a set of innovative methods and solutions in the ICT, mobility and energy. The project aims to influence and to improve the living standard (prosperity), social inclusion etc. Further, the project aims to “repaint cities with brighter solutions at the disposal of their smart communities”. The way of fulfilling this goal can serve as an excellent example of a “model of replication” for any other cities worldwide that aim to some type of urban development [14].

The project abbreviated as ROCK- “Regeneration and Optimization of Cultural heritage in creative and Knowledge cities” pertains to city centres of any historical meaning that can serve or be used for economic & sustainable development of the city. The project is divided as ROCK VISION and ROCK AMBITION. Under ROCK VISION, the aim of the project is transforming the historical downtowns of the cities into so-called Creative and Sustainable Districts. On other hand, the aim of ROCK AMBITION is to regenerate and to reuse this model of initiatives already implemented or used in 7 selected cities i.e. Turin, Liverpool, Vilnius, Cluj-Napoca, Lyon, Athens and Eindhoven. The the so-called cities of replications are chosen to be Skopje, Lisbon and Bologna [14].

The project titled as CreArt-“Network of European Cities for Artistic Creation Program: Creative Europe" involves a total of 11 project partners including cities (and City of Skopje) and art associations. Partly financed by the European Commission, the aims of

the project are to develop and to further accelerate the cross-country mobility and exchange between the different workers in the cultural sector, to create further opportunities, to develop new methodologies, the more extensive use and implementation of IT innovations, institutionalization and internalization of the European Day of Artistic Creativity and the European travelling Exhibitions, research for the best practices in so-called culture-led development, developing a social status for the cultural/artistic workers, dissemination of the cultural offer in the project network cities, to further develop and enhance the so-called Visual Arts sector etc. [14].

For increasing civil involvement and commitment in the decision-making process, the City of Skopje is involved in the project titled EU.CA.NET- “European Agencies Network for citizenship, inclusion involvement and empowerment of communities through the urban transformation process under the Europe for Citizens Programme- 2.2. Networks of towns”. Associazione Urban Center Metropolitano from Torino, Italy is the project leader while the City of Skopje together with Cluj Metropolitan Area Intercommunity Development Association, City of Marseille and Bologna Urban Center. The project goals are discovering how the so-called City Agencies are effective in increasing civic participation & involvement in the decision-making process and mutual sharing of any type of knowledge for a successful implementation of the EU Urban Agenda [14].

For the issues connected with climate change adaptation, it was started the project titled EPICURO- “European Partnership for Innovative Cities within an Urban Resilience Outlook”. In implementing the project there is a network of ten project partners i.e. Vicenza Municipality (Coordinator), TCPA, Ekodoma, City of Salaspils, European University of Cyprus, Alba Iulia Municipality, Province of Potenza, City of Vejle, Epcsr1 and City of Skopje. The aim of the project is sharing or mutual exchange of the best knowledge in urban prevention and climate change adaptation while building so-called Civil Protection teams for building resilience within their communities [14].

Another smart city project is called CREATE- “Congestion Reduction in Europe: Advancing Transport Efficiency”. The project is dedicated to solve transport problems in urban centres. Thus, the project divides the cities in separate stages according the scope of already solved/unresolved transport related problems i.e. Stage 1, Stage 2, Stage 3 etc. The aim of the project is to make evaluation and comparison of urban transport related problems in each of the cluster of cities that belong to each Stage. The point is to gradually use the experiences of the cities (such as London classified in Stage 3) that already implemented a set of transport solutions and those solutions to be a good example for those cities that belong to Stage 1 [14].

The project titled SINERGI- “Social Integration through Urban Growth Strategies” is another project that is promoted under the sponsorship of the Programme “Europe for Citizens”, Action 1: Active Citizens for Europe, Measure 1.2. Thematic Networking of Twinned Cities. The project involves four partner cities i.e. City of Lisbon, City of Turin, City of Zagreb and City of Skopje. The objectives of the project are to set up a network of city administrators, scientific institutions, civic organizations etc., that will work together

in order to mutually exchange any knowledge about EU regulations and experiences of citizen participation in decision-making processes in the area of urban planning and development and mutual exchange of good practices in those fields [14].

BIN2GRID is a project that is planned to be implemented in four cities i.e. City of Malaga, City of Zagreb, City of Paris and City of Skopje. The aim of the project is using already an unexploited food waste in order to be transformed into biofuel (biomethane) that will be supplied through so-called a network of local filling stations. The so-called SOCIAL CAR project is a project that aims to offer a set of innovative solutions to urban transport demand management and to carpooling in urban places by developing a new carpooling model. Another similar project is Streetlight-EPC: Triggering the market uptake of energy performance contracting through street lighting refurbishment projects. The project objectives are oriented towards innovative street lighting technologies and establishment of an Energy Performance Certificate [14].

Other project so-called Ele.C.Tra project, aims to increase the general awareness about the greater use of electric scooters in urban areas, to increase the awareness among city residents and tourists about changing their habits in using other innovative vehicles especially the use of scooters. The City of Skopje will benefit from this project in promoting the electric transport model (especially the use of e-scooters in the city) and to successfully “deliver” this knowledge to other municipalities in the country. Besides Genoa, Barcelona and Florence, the City of Skopje is among other 7 cities about the portability of the model [14].

The CASCADE project is a project dedicated to energy efficiency in buildings & districts, renewable energy sources & distributed energy generation, and energy in urban transport. This project involves a total of 19 big cities from Europe, Wuppertal Institute and Koucky& Partners. The City of Skopje is part of this project by his involvement in mentoring, different study tours etc. The final goal is to improve the process of delivery of different energy policies [14].

The effective and efficient communication with citizens is one of the pillars that characterize one democratic society. The FUPOL project financed within the FP7 Program of the European Union aims to improve or to further facilitate the ways of communication between government institutions and administrators with the citizens. Part of these efforts are developing effective IT tools that will facilitate the mutual communication i.e. greater participation of citizens in creating city policies and regulations. By using Facebook, Twitter and Blogspot accounts of the City of Skopje, any comments from the citizens are systematically ordered by the special software and subsequently included in the decision-making process of the City of Skopje. Other project where the City of Skopje was involved is in the project titled NICHES+. This project is a continuation of the project NICHES and deals with the introduction of a set of innovative concepts or measures to urban transport in order to make him more efficient by moving from its current so-called “niche” position to a more advanced urban transport application. The project participants are the following so-called Champion cities i.e. Burgos, Skopje, Cork, Daventry, Artois-Gohelle, Worcestershire and Trondheim [14].

The RENAISSANCE project that involves the cities of Skopje, Szczecinek, Gorna Oriahovitsa, Perugia and Bath dedicates to a package of measures and activities in the fields of energy and environmental innovations, transport system management innovation, technical innovation and innovative pricing policies and payment technologies. The initiatives titled SEENET I and II involve a total of 21 regions and municipalities including the Skopje municipality. The goal of these initiatives is to facilitate or to further enhance their mutual economic and social development. In addition, the PAMLED project is a project that deals with “building effective partnerships among European and Mediterranean municipalities for local economic and social development”. Further, the project is oriented towards improving city marketing and planning & management [14].

The City of Skopje is involved in the SWEB project that deals with security, interoperability and safety especially in the mutual exchange of important documents and information between different level authorities. In addition, the project develops new so-called “mGovernment” tools for the Small Governmental Organizations. Further, in the field of improving innovations and research in security organizations, the so-called INSEC project has a central role. Finally, among many other previously mentioned projects where the City of Skopje was involved is the project titled TRANSPOWER in the field of urban transport and urban mobility. The project aims to introduce resource saving, efficient and environmental friendly methods and techniques in urban transport & mobility [14].

## **5. Conclusion**

In recent years, the smart city concept drastically evolved around the extensive use of IT in almost every field of city operations that can be gradually improved with the help of IT technology. From e-participation to environmental issues and many other fields of interest, the smart city concept is a universal approach to almost every city in the world. As a universal concept, there is no single or universal definition that can define or fully describe the smart city concept. However, most definitions give the core meaning of smart city usually incorporating the concepts of so-called 6 SMARTS i.e. Smart People, Smart Mobility, Smart Living, Smart Economy, Smart Governance, and Smart Environment.

During the years, by judging the historical development, the City of Skopje gradually improved his international cooperation. Today, the city’s international cooperation has three main forms i.e. “Sister” cities, on the basis of protocol & cooperation program and contact. The City of Skopje successfully established strong international ties with more than 60 cities worldwide from more than 20 countries in the world. In recent years, the international cooperation of Skopje as “Open city” is widely recognized through so-called international smart city project development.

Until now, the international smart city projects where the City of Skopje was involved (or still involved in present), included scope of 20 different projects with different duration

and mainly EU partly or fully funding. The projects covered many fields i.e. energy, mobility, ICT development, cultural heritage, education and training, civic involvement and commitment to the decision-making processes, sharing of good practices in urban prevention, climate change and air pollution, urban transport, urban planning and development, food waste collection, street lighting, social and economic growth, communications with the citizens, implementation of innovative concepts, marketing, planning and management, security, interoperability and safety, research etc.

The expectations are that the international smart city project cooperation of the City of Skopje will be strongly intensified in the future. The city must be in full “step” with the contemporary processes of globalization and internationalization of the concept of smart city development. Consequently, in the future the number of scientific studies that will pertain to the general & smart city development of the City of Skopje will gradually improve. Especially, the empirical studies that deal with benchmarking of the cities including the City of Skopje in the field of international smart city project cooperation.

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