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Smart City as Framework for Creating Competitive Advantages in International Business Management

UDC: 005.591.6:711.452 ; 007:711]:004

DOI: 10.7595/management.fon.2014.0015

The paper presents the essence of the Smart City concept and opportunities for the creation of competitive advantages arising in the framework generated by this concept. Various elements of a Smart City are analysed and related to different options for economic growth and business innovation improvement. Possibilities arising from networking and clustering in Creative Cities are listed along with some details of advantages provided by a symbiosis of information and communication technologies and creativity to companies operating in such environments. Managerial aspects of the Internet of Things are presented and identified as a basis for the Smart City outlook, but also as a major prospect to develop certain business opportunities leading to competitive advantages for companies operating out of smart cities.

Keywords: Smart City, Competitive Advantage, International Business Management, Creative City, Internet of Things, Information and Communication Technologies.

1. Introduction

"Not houses finally roofed,
or the stone of walls well built,
no not canals or dock yards make the polis,
but men able to use their opportunity."

Alcaeus, poet, 620 BC

The beginning of the second decade of the 21st century is characterized by dramatic changes in economies and societies worldwide spurred by the rise of the second machine age and the emergence of smart cities as hubs of creativity and innovations. As developed countries go even further into the domain of knowledge and innovation driven economies, the importance of creativity and efficiency in offering new products and services becomes a must for achieving growth and sustainable competitive advantage. The heavy blows dealt to traditional business paradigms by shockwaves of economic crisis 2008 and subsequent emergence of machines as a replacement for many knowledge workers prompted the transition from long term customer relationship paradigm to the one of trust between the customer and the brand. In such a global environment smart cities emerge as a basis for business operations offering a set of particular advantages to companies and managers operating within their framework.

Building on local economies of scale guaranteed by the sheer number of their inhabitants, supported by ubiquitous cutting edge information and communication technologies (ICT) and using the strategic advantages of operating out of hubs of creativity and innovation managers nowadays use smart cities as a spring-

² This paper brings the results of research of the author within the Project no. 179081 financed by the Ministry of Education, Science and Technological Development of the Republic of Serbia.

board for launching international business operations that use all of these advantages to build sustainable competitive advantage. This new business paradigm poses numerous questions related to the role of smart cities for national and even regional economies and long term sustainability of economies and wellbeing of nations that fail to develop these business focal points numerous in population and equipped with all the elements that make a city truly a smart one.

2. The significance of Smart City concept in 21st century from an international business perspective

In current economic and business conditions the general importance of cities cannot be stressed enough. Since the early times every civilization can be characterized by its urban developments, and this especially holds true for the contemporary Western civilization, defining the human conditions we live in, that may be characterized as city dominated, especially in late 20th and early 21st centuries when the number of people engaging in agriculture dwindles in the first world countries to a number that can barely be measured by the census and worldwide to less than 50%, with the prognoses that this number worldwide will be less than 20% by the end of the century (UNPD, 2007). Of especial importance, in such a context, is the global trend of increase in concentration of almost entire populations in just a few very large cities.

Large cities, with dense population, counted in millions and tens of millions, may be very productive places, innovative ones that are potentially very environmentally friendly, fulfilling almost every aspect of desirability for the future. On the other hand, a fast and intensive arrival of new citizens presents these cities with very real challenges in the present and in the immediate future. The services need to be provided at once for a huge population and the benefits and revenue income needed to support these services will be available fully only in the future. Thus, there is a high probability of traffic congestion, pollution and limited access to resources. City councils and other local authorities grappling with such challenges and even more seriously with the challenge of the globalization that has connected such large cities across the globe in the competition for human resources, investment capital and ideas, are implementing new approaches to many aspects of urban planning, design, service provision, infrastructure development and operations broadly called Smart Cities. The importance of management and the role of information and communication technologies in the implementation of such ideas are of crucial significance. The relevance of the Smart City concept in providing for the needs and thus attracting people of Y and Z generations is of utmost economic relevance, since these people are perceived to be the developers of new economic potentials and opportunities and the competition for hosting members of these highly mobile generations is rapidly increasing among cities across the globe (Harrison & Donnelly, 2011).

There are many definitions of the Smart City and it is no wonder a wider consensus has not been reached on a unified approach to the concept having in mind its novelty. The focus on the interlinings and networking effects arising from the interaction among the intellectual capital of universities, the wealth creation of industries and the democratic government of civil society makes the essence of generating dynamic spaces in which knowledge can be exploited to enhance innovation and economy in Smart Cities (Leydesdorff & Deakin, 2011). The importance of connections that bond the IT infrastructure, the business infrastructure, and the social infrastructure, leveraging collective intelligence makes the essence of the Smart City according to (Harrison et al., 2010). The use of smart computer technologies is what Smart Cities are based on, making the critical infrastructure elements and services of a city intelligent, interconnected and efficient (Washburn et al., 2010). The Smart City can also be considered a contextualized interplay among managerial and organizational innovation, innovative technology and innovation in policies (Nam & Pardo, 2011). One side of the analysis of the Smart City phenomenon has to be devoted to managerial aspects of ICT related companies business because of the tremendous importance of ICT in Smart Cities and correlating investments in this area that spur other business opportunities and entrepreneurial activities. If an ICT company devotes its business objectives to developing technologies related to Smart Cities, that can be viewed in another dimension, not just the one that is foundational for other activities in a Smart City. This is a strategic business aspect of ICT in a Smart City and it is presented in Figure 1, along with its relation to the technology view, i.e., a concrete technology solution for a specific Smart City and stakeholders or systems view, i.e., city institutions along with officials and citizens. Therefore one has always to bear in mind the relationships between strategic aspects that ICT solutions development for the Smart City has for ICT companies and the other aspects of these technologies that are more vital for other stakeholders (Paroutis, Bennett & Heracleous, 2013).

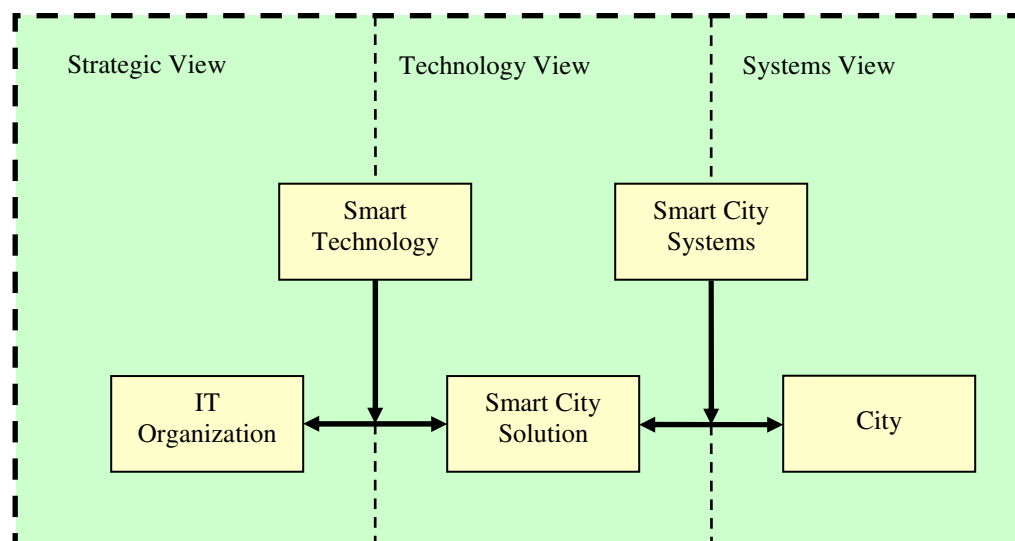


Figure1: Perspectives on researching a Smart City solution (Paroutis, Bennett & Heracleous, 2013, p. 9)

The business logic that is behind the transformation of traditional cities into Smart Cities can be different. Two modes that describe the phenomena have been identified in (Kuk, & Janssen, 2011). The first one has business models come into being before the information architecture that makes a vital part of the Smart City. In this scenario, business value is created through the use of technology and the main idea is to enhance existing services and to bring about the new ones. In the second one the opposite holds true; first the infrastructure is created that is in fact a technology platform inducing changes and upgrades in business practices. In the first scenario business value is accumulated faster and many improvements in existing services and new services become available to the citizens of the Smart City. The second approach requires much more resources and is basically a long-term approach requiring also time to bring about new services to citizens. But in this case the services implemented are much more advanced and improved and much higher levels of sustainability of the business models that are in the roots of these services have been achieved.

In order to function in a sustainable way and to provide overarching, intelligent services to its citizens, Smart Cities have to rely on integrated infrastructures in various domains. This unified whole, that presents an information backbone and at the same time a function and utility highway connecting all spatially and functionally diverse parts of the Smart City has to employ cutting edge technology to monitor and to control city beats in different arenas of its growth and also in everyday functioning. For monitoring purposes state of the art devices are crucial and they provide capabilities for huge efficiency enhancements of various functions, but besides this, ubiquitous sensing brings along many challenges, least of which are technological, and that border many areas such as privacy, human rights and many other different social and humanistic fields. In designing Smart Cities an improved automation of systems is required and advanced autonomous automated systems may both monitor and act if needed. As cities grow larger the need for resource consumption exponentially grows, bringing into focus the incentives for innovation that tackle climate changes and resource shortages. This can only be provided by smarter urban infrastructure.

Advancements in different fields of urban dynamics are needed and this is again related to an omnipresence of sensing in Smart Cities as presented in Figure 2. In the roots of all these systems are communication technologies that enable wireless, low energy consumption sensors to transfer data 24/7. As regards location and coverage there are many different networks in Smart Cities (Hancke & Hancke Jr, 2012). Home area networks use short range standards such as Wi-fi (802.11 g/n). Wide area networks connect customer premises with utilities supplier requiring much broader coverage. For ultra short distance communication that is crucial for Smart City operations in general, once the basic networks that have been mentioned are provided, the RFID (Radio Frequency Identification) and the NFC (Near Field Communication) technologies have come to prominence in this context. The RFID technology is widely spread today, consisting basically of the RFID tag, which may be active or passive and is a data storage, and of the RFID reader that in close

proximity to the tag induces an electromagnetic field that provides energy for passive tags and enable data reading. The RFID enables a range of applications in Smart Cities such as tracking of objects, asset management and smart parking. This technology also provides for environment data to be written to the tag and because passive tags are inexpensive and have very low energy consumption being a power only when needed, massive deployment of passive RFID tags can provide for omnipresent sensing in Smart Cities.

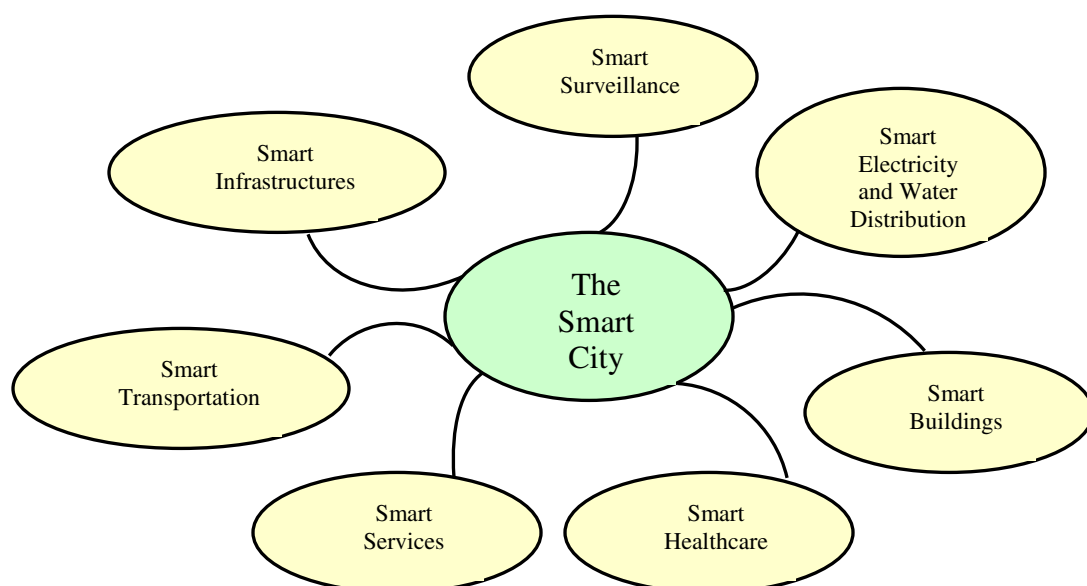


Figure 2: Sensing in Smart Cities (Hancke & Hancke Jr, 2012, p. 394)

In contrast to the RFID technology which provide unidirectional communication, the NFC technology can provide bidirectional communication which is in some scenarios of utmost importance for the implementation of utility and other business related functions in the Smart City. The NFC is mostly used in mobile phones and other handheld devices where it provides communication capabilities spanning mini ranges. One important application enabled by the NFC is a digital wallet function of smart phones that allow them to replace credit cards and spark the drive towards cashless societies. The NFC also provides for data sharing among user devices and city infrastructure allowing for extremely precise locating of each person, that makes certain sophisticated city functions possible, smart energy metering intertwined with "pay on the spot where the meter is" capabilities and data acquisition and control making user smart phone platforms for advanced measurement and processing of environment and other data.

By describing different aspects: technological, economic, organisational, managerial, etc. of Smart Cities one can determine that the emerging concept is very complex. In order to provide a framework that will be at the same time comprehensive and overarching, capturing all the important aspects of this phenomenon we turn to proposition in (Chourabi et al., 2012). Figure 3 depicts major factors influencing Smart Cities that allow for the measurement and comparison of the existing initiatives in this field. We will discuss some of these factors that have not been mentioned so far and that are important in the context of creation of competitive advantages in international business management. Economic factors have been major drivers behind Smart City initiatives so far. An overall high degree of competitiveness has been a hallmark of Smart Cities, as well as a key indicator for measuring their success. The emergence of an environment that is favourable for business development and economic growth has been pivotal in the framework of a Smart City. Business creation, job creation, workforce development and improvements in productivity have all been economic outcomes of smart city initiatives. Another important factor in evaluating Smart City initiatives have been people and communities of these cities. Factors that can be measured and which will be improved by these initiatives include digital divide, participation and public partnerships, education, quality of life and existence of information and community gatekeepers. The policy context is a factor that can be very helpful in the analysis of success of Smart City initiatives. Policy making plays an important part in the transformation from an ordinary into a smart city. The readiness of institutions to remove legal and regulatory barriers may be

crucial for such initiatives, as well as overall interactions of technological, political and institutional components in a city and in its wider environment. Closely related to this factor is the one labelled as Governance in (Chourabi et al., 2012). Many elements of this factor influence Smart City initiatives including collaboration within the public sector, leadership, data-exchange, accountability and transparency among others. And, finally, managerial and organisational factors have a heavy influence on Smart City initiatives. In this area some challenges have been identified: the project size, attitudes and behaviour of managers, organizational diversity, alignment of organisational goals and resistance to change. Also, and partly as solutions to these challenges some of the strategies that may be employed to attain a Smart City initiative have been pinpointed, such as developing project team skills and expertise, appointing a respected leader in the area of ICT related activities, fostering end-user involvement, adequate training for all stakeholders, innovative funding and measurable deliverables.

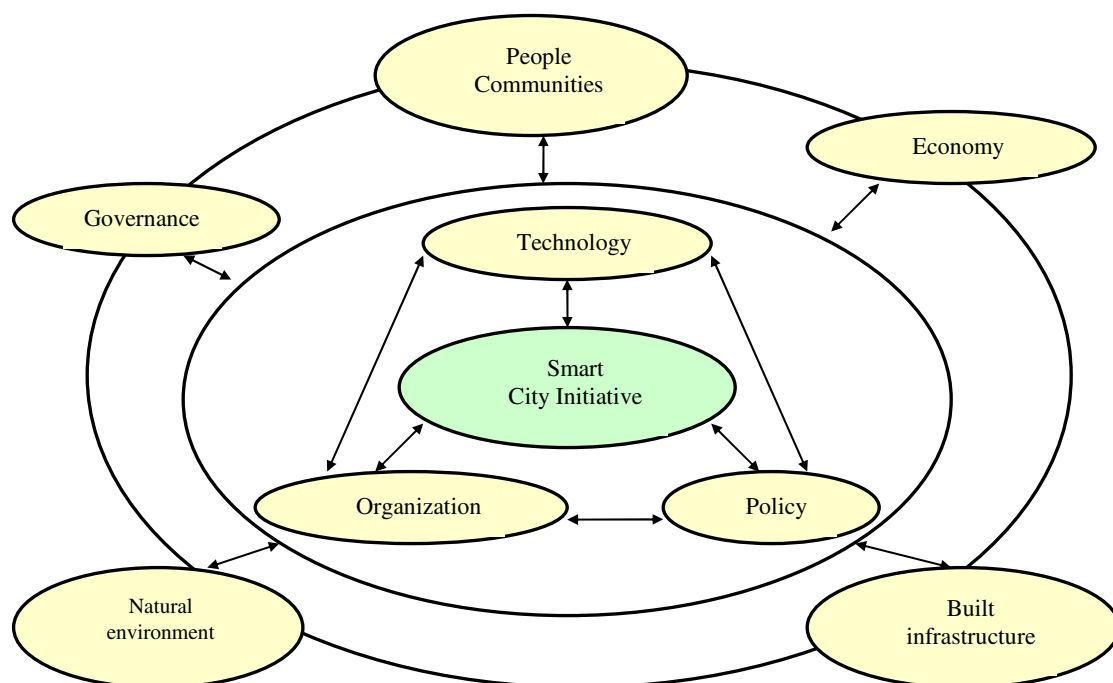


Figure 3: Smart City framework (Chourabi et al., 2012, p. 2294)

Many examples of successful Smart City initiatives are important from an international business management perspective. Helsinki has been successful in implementing public competitions as policy-like instruments. These encouraged the development of a new mobile application using Open Data and benefiting both to the Mobile Application Cluster members that developed this application, and to the customers using them (Hielkema & Hongisto, 2013). In Thessaloniki, the development of broadband networks, smart urban spaces, web-based applications and e-services helped different city districts to attain their aims in the arenas of competitiveness and sustainable development. This example shows how new orientation in urban governance may help society deal with the challenges of digital literacy, creativity needed for enhancing smart environments and developing business models grounding the sustainability of urban e-services (Komninos & Tsarchopoulos, 2013). The city of Manchester, which has long been considered one of the foremost industrial cities of the first world, had to grapple with high unemployment rates and other consequences of the post industrial era. Key stakeholders coming from the public sector, business, education and the community sector of this city, responded to this by implementing ideas that brought about a more inclusive, creative and sustainable city which is also relevant for the further development of international tourism. Through the imaginative use of information and communication technologies, commitment to open innovation and the co-production of new and innovative services in public and private collaboration, the citizens of Manchester nowadays experience one of the most successful instances of implementation of the Smart City concept (Carter, 2013). The city of Barcelona has been very effective in the implementation of the

Smart City concept. It is pursuing the goal of achieving a prestigious status of the Smart City model for the world. Important elements of the strategy to implement the Smart City concept in Barcelona have been Smart districts, living labs, digital initiatives, e-Services, smart infrastructures and Open Data (Bakýćy, Almirall & Wareham, 2013). The European Union is allocating immense resources and devoting constant efforts to achieve urban development in the framework of the Smart City concept for its metropolitan areas in the conditions of intense global competition. Even some smaller cities like Krakow and Zaragoza have also implemented some elements of the Smart City concept in the form of devising numerous sets of digital forms that citizens and foreign tourists can fill and submit online, thus eliminating commuting costs, and reducing costs related to public administration (Caragliu, Del Bo & Nijkamp, 2011).

3. The role of Creative Cities in achieving competitive advantages in international management

There is an extremely fierce competition in many industries in the conditions of digital economy (Milicevic & Ilic, 2011). Highly competitive international markets of today are characterised by fast-paced technological advancements, short life cycles of both physical and electronic products, but also by sophistication of demand of individual and business buyers, and also of foreign tourists. In such conditions there is a growing importance of knowledge, information and ideas as resources.

Smart Cities are expected to be general drivers of economies and societies around the globe in the future, with every Smart City developing its own special characteristics and sets of traits that allow for sustainable competitiveness. One area that is of special interest in describing the specialization of Smart Cities is creativity. Creativity, the creative class and creative industries represent a hotbed of innovation and influence every human activity. They are especially important as the world goes forth into the second machine age with prospects of leisure time for general population being such that creative industries will become the basic industries in terms of their importance for the long term sustainability of human societies (Brynjolfsson & McAfee, 2014). A fine example of importance of creativity in contemporary global economy is the rise of Apple Inc. that combined distinctive creative features with cutting edge technologies and innovation providing the market with new products and services that were both functional and artistic in their nature and becoming in the process one of the most successful companies of today. In parallel to this, Steve Jobs, the founder of Apple Inc., has created another stunningly successful company that is even more obviously in the domain of creative industries, Pixar Inc. Again the combination of technology and creativity, with a much higher dose of creativity in the case of Pixar Inc., provided for another revolution in movie animation and establishment, in a time span that was shorter than one decade, of the leading company in this creative sector (Isaacson, 2011). This proves that creative industries have a unique potential to add the flavour to information and communication technologies that makes them more human and by consequence more economically successful. On the other hand, creativity spurred by technology may provide significant economic results in the shape of successful companies and strong industries that are drivers of growth and innovation in other fields of human activities. Clustering of creative activities and companies proved to be of utmost importance for the creative process and overall operations in creative industries. The conceptualization of this phenomenon in the framework of the Smart Cities leads to the concept of the Creative City.

In the contemporary global economy, Creative Cities are often organized around production systems characterized by flexible networks connecting creative companies and flexible labour markets. This provides an essential framework for a high intensity and frequency of information creation, interchange of ideas as well as for frequent experimentation by individual creative companies, in regard to industrial processes and new products and services for the global market. The fluidity of the economies of Creative Cities means that the companies and the creative workers that make them up are constantly in contact with one another which by itself unleash diverse innovative energies in the Creative City and among the creative class (Scott, 2006). In order to create a basis for measuring success of a Creative City and its achievements a quantitative index has been proposed in (Hartley, Potts & MacDonald, 2012). The Creative City Index presents a new approach to the measurement and ranking of creative global cities. In its basis there are eight primary dimensions, each with multiple distinct elements. Some of these dimensions are measuring the size of creative industries, the scale of cultural amenities, or the flows of creative people and global connectedness. Adding to these there are several dimensions that measure the demand side of creative participation, the attention economy, user-created content, and the productivity of socially networked consumers. The results for 5 global Creative Cities

are presented in Table 1. One can conclude that in Europe the long histories of cities and their central role for the respective national states lasting for centuries still have a great bearing on the success of these cities today, whereas in Australia the differences are not as big due to the specific history of development of this country. A basic analysis of these two trends reveals that there are advantages and disadvantages in both situations. A uniform growth of multiple city centres, in the case of Australia, provides more advantages for general population of the entire country, but relatively low index results for all Australian cities present a threat when considering global competition with other cities around the globe. High index results of European capital cities are a promise for global domination and a basis for the creation of global cultural and economic centres that will be able to foster the development of other cities in their respective countries, but the price for this is relatively low index results in other cities which will leave their citizens behind, for a while at least.

Table 1: Creative City Index results for 5 global cities (Hartley, Potts & MacDonald, 2012, p. 18)

CREATIVE CITY INDEX	Brisbane (AUS)	Melbourne (AUS)	Berlin (GER)	Bremen (GER)	Cardiff (UK)	London (UK)
1. CREATIVE INDUSTRIES SCALE, SCOPE & EMPLOYMENT	49.8	54.4	53.4	49.2	51.7	96.6
2. MICROPRODUCTIVITY	37.0	41.8	56.3	39.2	49.2	83.6
3. ATTRACTIONS & ECONOMY OF ATTENTION	15.7	30.8	54.9	12.6	10.7	97.8
4. PARTICIPATION & EXPENDITURE	37.0	41.5	69.5	54.6	37.8	79.8
5. PUBLIC SUPPORT	100.0	80.1	77.3	79.3	68.5	94.4
6. HUMAN CAPITAL & RESEARCH	41.8	48.9	75.2	54.8	50.2	75.6
7. GLOBAL INTEGRATION	40.5	52.2	46.0	28.3	25.4	76.7
8. OPENNESS, TOLERANCE & DIVERSITY	67.5	76.0	74.0	70.5	63.6	76.5
CREATIVE CITY INDEX	48.7	53.2	63.3	48.6	44.5	85.1

Having these considerations in mind, one can comprehend the importance of existence of a major economic and cultural hub and a huge competitive advantage this provides for the country, the nation and the region in international business, but one also has to bear in mind the responsibilities for the uniform development of all the cities that may provide for equal opportunities for all their citizens. Only by balancing investments in human resources and attention of governing bodies and by application of appropriate long term policies will countries and regions be able to make the most of historic heritage of their great cities and at the same time provide equal opportunities for everyone.

Intelligent cities, another concept related to innovative merging of managerial skills, information and communication technologies and business frameworks, are pertinent for both urban development and management. In the field of contemporary management the Intelligent City sustains the globalisation of innovation networks and the consequent opening up of innovation systems on a global scale (Komninos, 2009). By bringing together urban resources, innovative organisations and cutting edge technologies, intelligent cities may help internationally oriented companies to deal with the challenges of global competition and foster cities to make a further leap towards the knowledge, innovation and competitive advantage implementation in the global arena.

Complex relationships between global networks and cities that have been so far by definition local make the essence of the future economic, cultural and business prospects in our interconnected and technology-dependent world. Investments in information and communication technologies and the infrastructure built on top of these technologies support the competitiveness of cities and dramatically influence economic development alternatives for individuals and for companies that have international business orientation. The con-

temporary cyberspace age leaves us in doubt whether any of the resources that are controlled by cities are keys to their economic development or just a prerequisite in a need of additional, more global essence. It is increasingly evident that the 21st-century economy is being shaped more by global than by local forces and because of this the local economic development paradigm must be rethought, and that communities taking a new path have a chance of success in a new global economy (Blakely, 2001).

The concept of the Internet of Things (IoT) is a new vision of overarching communication paradigm involving purposeful communication and bidirectional transfer of data through the Internet connectivity among different objects or things in our environment (Atzori, Iera & Morabito, 2010). Objects that are nowadays part of the everyday life and common use are becoming or will become in the near future equipped with sensing digital parts, microprocessors and suitable communication protocols, enabling them to be part of digital communication with one another and with the users, which will be of special importance for Smart Cities as a framework for creating competitive advantages in international business management. In this manner these objects are becoming an integral part of the Internet in the same manner the personal computers and other devices have been in the past and will continue to be in the future. The proliferation and omnipresence of the devices that have capabilities to exchange and process data makes the emergence of the Internet of Things a reality of the second decade of 21st century. Today we have sensors and actuators embedded seamlessly with the environment around us, and the information is exchanged and transformed both vertically and horizontally across platforms in order to develop a common digital vision of the environment. Ignited by the adaptations of various wireless technologies, such as beforehand mentioned RFID and NFC, the IoT has stepped out of its infancy and is becoming the next revolutionary concept in transforming the Internet into a fully integrated network, allowing us to have a real time comprehensive digital image of our real world. As we move from Web 1.0, characterized by static Web pages and email communication, through Web 2.0, characterized by social networking, interaction and participation, to the IoT or the Internet of the future, characterized by ubiquitous, networked sensing and computing, the need for data-on-demand, using sophisticated intuitive queries, increases daily and significantly (Gubbi et al., 2013).

Technologies and scenarios for the applications that make the Internet of Things a reality gradually mature and become more and more present in the contemporary world allowing for the connectivity and exploitation of millions of devices, making the Internet truly ubiquitous, which will be important for international managers in the future. Within our grasp today are even such futuristic scenarios in which enablers such as advanced technologies will allow things to evolve and learn from experiences of other things, thus becoming more autonomous, more reliable and smarter (Kyriazis & Varvarigou, 2013). Nevertheless, there still are some technological challenges for those who are implementing the IoT. These challenges are about regarding the dependability of technologies used for bringing the architecture of IoT to life, both in terms of reliability and availability, since a device failure might put people in danger or result in financial loss (Silva et al., 2013).

The Smart City concept involves reliance on ICT and Internet connectivity thus making a natural complement with IoT implementation. To make a city truly smart one has to have real time data on many things in the city and this is what concept of IoT can provide. There are already some services that are functioning and some might be enabled by further implementation of the urban IoT paradigm. These services are of high importance in the Smart City context because they can at the same time increase the quality and enhance the services offered to the citizens and bring a competitive advantage for the city and score positive economic output for the city administration in terms of reduction of operational costs. Some of these services are related to these urban issues: structural health of buildings, waste management, air quality, noise monitoring, traffic congestion, city energy consumption, smart parking and smart lighting (Zanella et al., 2014).

It is of high importance to early envision the ways in which the Smart City framework will enable enterprises to grow and become more innovative. One important aspect of the IoT, which is a basic infrastructure of the Smart City, as we have seen in previous paragraphs, is that it may allow for major business opportunities to be rooted in the basics of every company operating from a Smart City framework. The Real-World Visibility and the Business Process Decomposition are two business opportunities that may become inherent in operations of companies that use smart cities as a springboard for their international operations (Haller, Karnouskos & Schroth, 2009). The Real-world visibility marks business opportunities arising in the use of automation of identification and data collection gathering. This will allow companies to better understand what is really going on in the physical world around them and get a better grip on their operations. Effects of this

are visible in increased knowledge of real world business performance and precise pinpointing of the status and whereabouts of the assets and products in the supply chain. The deep understanding of the business processes allows a better managerial approach at the operational level and can lead to the optimisation of critical processes. The increased accuracy and timeliness of information about the business processes provides competitive advantages in terms of process optimisation (Haller, Karnouskos & Schroth, 2009). The Business process decomposition is another business opportunity provided by a wide implementation of the IoT, mostly in the context of the Smart City. Whereas the Real-World Visibility is basically about the collection of data on large scale on every aspect of real world important for business operations and fast processing of these data in order to make timely business decisions, the Business process decomposition takes this a step further. With the advent of sensing and processing devices and possibilities for them to be embedded and omnipresent, it is not difficult to decompose a business process.

The decomposition of the business process provides process steps that are clearly distinctive and some of them may be executed in a distributed manner, even at the edges of the network and on physical items themselves. The physical objects that can be part of execution of a process step of a decomposed business process and have the capacity to process business logic are called smart items. With the rise of sensing and processing capabilities of embedded objects and other physical objects that can be part of both reporting and managerial decision making on the distributed business process steps, more and more instances of such steps will be available to companies in different industries making overall economies of Smart Cities more efficient. The decomposition of existing business processes and the distributive nature of execution of the resulting process steps can lead to an increase in scalability of overall business operation and achievement of higher performances in comparison with international competitors. Further, the distributed nature of business processes can provide for improvements in business decision making and in turn make new revenue streams. The importance of deployment of efficient software tools on smart items in such scenarios is obvious and one can judge on high importance of managerial decisions regarding software development and innovation.

Conclusion

The creation of innovative, new business models that allow for competitive advantage in international business management in the context of the Smart City proves to be a new business paradigm in the world of growing city populations and rise of immense cultural, economic and creative hubs that smart cities are indeed. The importance of intersection of creativity, managerial ability and information and communication technologies is immense in the contemporary global economy. Businesses that have successfully mastered this fusion will rely on economies of scale and advanced ICT infrastructures of the Smart City to build a true global competitive advantage.

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Received: April 2014.

Accepted: May 2014.

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