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Urban Development Process

by

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Thesis for the degree of Doctor of Philosophy

XXX 2017

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Abstract

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Declaration of Authorship

I, xxxx, declare that the thesis entitled xxxxxxxxxxxxxxxxxxx and the work presented in the thesis are both my own, and have been generated by me as the result of my own original research. I confirm that:

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- where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
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Acknowledgements

This work was undertaken with financial support of the

This thesis would not have been possible without the support of many people. I would like to express my sincere gratitude to:

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- ...

Chapter 1

Introduction

Urban development is a widespread archetype for out-of-reach improvement in cities of the Global South. However, in its essence it is more a kind of constant catch up with the West and western urban paradigm than an elaborated form of intrinsic local perception, knowledge and action toward urban transitions.

In this highly competitive international arena, transitional countries experience grave consequences due to the paucity of practical experience within the dominant/ruling western ideology of the urban. They are caught in this new context of relentless rules of market economy, decentralized political and administrative powers, lack of resources, scarcity of general international investment and scant interest for dramatic shifts in all aspects of their social organization and spatial transformations. The blurred and askew morphology of post-socialist cities in transitional countries is therefore the result of continuous pressure from the negative side effects of imitating and lagging behind conventional urbanization models and accelerating globalization patterns imported or imposed by the Global North, or colloquially known as "the West".

The urban transformation of Serbian cities falls into this clich of the new post-socialist urban reality, which emerged during the "transition to markets and democracy" (Tsenkova, 2006). The dismantling of the communist system during the late 1980s represented a substantial change in all aspects of social organization, the economic model and the political system. However, Serbia is still identified as a post-socialist melting pot where representative democracy, civil society and market economy principles collide and merge with authoritarianism, vertical decision making and populism practices. In such a situation, concern about the urban has been left out and given over as a battlefield for social needs in practice and technical solutions on paper and an easy prey to the exercise of power and interest. Therefore, the practice of planning and designing Serbian cities has been narrowed down to a mere technical issue most often even without an actual or adequate realization in practice. Not to mention that very few theoretical or general methodological research studies bothered to examine alternative planning modes, techniques and instruments in transition, but continued with the manner of replication from well-known counterparts of the Global North.

Among others, architects have a vital role in not only directing but also framing the path

of urban formation and development in post-socialist cities. Even more so, as they are primarily focused on practice and "savoir faire" about making the built environment. Yet acquisition of land and illegal construction are spatial interventions that have marked post-socialist production of space more than any planning or theoretical activity. IN general, even though we have different drivers on the global scale and in developed countries, there is a global trend of resorting to sociological, planning or even IC approach in scientific studies on the urban.

In order for architectural intervention in space to compete for more relevancy and rigour, architects all over the world have been gradually grown interest for scientific discourse on the context of built structures, spaces and cities in general. In the rivalry between spatial and social basis for their interpretations, the fact that the field of architectural research is not yet standardized in terms of methodologies and techniques opens the floor for experiments and innovations (ref). In the circumstances of developmental bouillon or "developmental schizophrenia"(Vujosevic) at the local level and an overall urge for architectural research framework internationally, my aim is to elaborate an architectural standpoint when applied on complex post-socialist urban reality in order to establish a methodological approach suitable, to a certain extent, for architectural scientific discourse on the matter.

In my striving to contribute to post-socialist architectural research, the far-reaching aim is to capture post-socialist urban complexity and dynamics in order to skip the classical procedure of urban development based on western planning paradigm and provide its practical application on multiple levels of urban decision making. This to be achieved requires supple methodological approaches which should better correspond to post-socialist socio-spatial patterns on multiple levels (state, city, municipality, community, and neighbourhood) and explain the correlations of various urban elements. Practice-oriented, locally focused and globally tuned approach to complex urban reality of post-socialist cities envisions embracing the dynamics of urban systems and operationality of architectural performance for circumscribing visual interpretations that enable continuous conclusion drawing and up-to-date introduction of any new element that may appear in the system. This chapter immerses into the contextual, scientific and disciplinary discourse of the following research. It marks the research context, historical and scientific, and puts a spotlight on the importance of the research problem as well as of the purpose and adequacy of this thesis. Then, I outline my research drive in the mentioned scope and present in a nutshell what this research is about, how it will be performed and what are the research expectations and practical results I plan to meet.

1.1 Field of Study

Due to growing social and physical transformations that become ever more intensified as current globalization continues to spread out profit maximization, consumption patterns and information networks (Harvey 2012), the cities have been experiencing a progressive

reorganization at spatial and social levels. Even though accelerating urbanisation is a worldwide process, it still assumes different forms and meanings, depending on the prevailing local conditions (Bolay, 2007). These overall circumstances of continuous urban development influence cities to serve as the primary channel linking local realities to global social, political and economic forces (Yates and Cheng, 2002; Tsenkova, 2006).

Cities are not simply market products and consumption patterns, but locally customized socio-political constructs as well (Marcuse et al. 2008). These external influences form a range of qualitatively different contextual circumstances for positive urban transition, i.e. urban development. Most settlements and cities from previous historical periods had reflected upon the various degrees of forethought and conscious design in their layout and function. This approach was referred to as a fixedly planned development, albeit many cities had tended to develop organically. Generally speaking, a range of urban disciplines (urban planning, theory, sociology, legislation and design) aim to decode and harmonize growing urban issues as a side-effect of the current globalization, urbanisation processes and spread of capitalism. These trends are mainly affecting cities and production of urban space and bid for the expertise on managing urban development (Allmendinger, 2009; Faludi, 1973).

In practice, these disciplines are embedded in a particular social context or a territorially based system of social relations. They react to the shifts in socio-economic and political settings (Tsenkova, 2006b), but have kept privileged relationship toward Western cities, which assumed to be the sources of urban creativity, vitality and innovativeness in urban domain (Robinson, 2006:2). Accordingly, they tend to fail substantially within the range of spatially and economically different environments that have undergone highly dramatic change in political, economic and social terms. For example, urban research and practice in transitional countries in Central and Eastern Europe (CEE) should unfold to help understand these phenomena in their immediate and wider context. The crucial is to identify patterns of the dynamic reality in these cities and be more consistent with spontaneous, everyday urban transitions. Furthermore, a corresponding change in approaching urban development can then be addressed by heterogeneous, iterative and generative process of urban space production in physical and social sense. Such approachaim to surpass the perception of cities as merely economic, social and cultural venues treating them as complex and dynamic urban systems. In these circumstances it is necessary to apply proper techniques and methodologies for urban research and analyses which encompass complexity and dynamics of cities for the improvement of their living conditions and the facilitation of social interactions in the process of urban development.

However, each discipline keeps its own track and pace in approaching urban matters. My architectural background has moulded my own research interest towards gaining knowledge and understanding on management of space and built environment. Moreover, production of space is also the core concern for architects. Architecture is a discipline focused on practice and consequently it urges for parameters, categories and structure for its practice-based analyses. Hitherto history and theory of architecture have been the main fields of

architectural research. On the contrary, recent trends in architectural research make a case for transforming the general body of knowledge on cities into a real-life problem-solving strategy that address human lifestyles, social relations and the concept of space Castells 2000, Dijk 2002 add more. However, ever growing presence of such research frame of reference urges for the advancement of architecture in terms of the relevance and reliability of the knowledge herein produced (ref). . However, missing links with the classical scientific discourse has caused a growing concern for what is research appropriate for architectural and design practice as well as for architectural stance in urban studies ref. This concerns especially methodologies, methods, approaches, domain and credibility (ref+Savic 2016b). Lacking the traditional scope of analysis, architectural research has been a polygon for innovations and experiments.

In terms of methods, there has been a significant number of interdisciplinary, transdisciplinary and multidisciplinary endeavours in applied research with an architectural focus in urbanism (ref). What is more, applied fields of research acknowledge the use of methodological hybrids (Datta, 1994, De Lisle 2011). This has opened doors for applied social sciences to investigate new methodological opportunities when confronted with complex and multiplex social phenomena (De Lisle 2011). Even more so as methodological and epistemological rigidity leads to ignoring the realities of the practical and cause catastrophic scientific failures of practice-oriented research (Rogers 2008, De Lisle 2011).

What I have recognized as a crucial change in the methodological paradigm of an applicable urban research from the architectural standpoint can then be condensed/boiled down to the rise of the global concept from static to iterative and dynamic. Commonly speaking, a static world is one in which all transitions are according to a known law and which do not give rise to uncertainty. When defining the evolution of analyzing and simulating an urban phenomenon or process, it is fundamental to state that the existence of a problem depends on the future being different from the past, while the paradigmatic possibility of finding the solution to the problem depends on the future being like the past. Therefore, a transition in some sense is a condition of the existence of any problem. The complex empirical realities of urban transitions collide therein with the powerful and dominant policy of continuous comprehensive production of knowledge. A scientific approach towards formulating the dynamics of urban transitions have to count on uncertainty as one of its fundamental facts and in this way accept and deal with an open-ended future and the limits of human knowledge about it.

Gaining knowledge has come to be a strategic activity rather than a search for truth (Kirby 2013). So science becomes incapable of controlling society and the rationalized reality appears false and irrelevant (Alfasi et al., 2004). Given these conditions, the growing gap between the formal structure and the dynamics that takes place in cities triggers an internal and independent process by which the system tends to spontaneously self-organize (Portugali 2011). Therefore, a city should be conceived as an organism, not a mechanism Charles Laundry, The Creativity City. In these terms, the city is interpreted as a living system which is constantly mutating and emitting new elements, a container for

processes of coming to be, breaking up and falling out, fragmenting and recomposing ref. Contemporary cities tend to be concentrations of multiple socio-spatial circuits, diverse cultural hybrids, and sources of economic dynamism - a venue where the past and the present converge upon one another. The city tells a story of one society and its attempts to move towards a positive vision of the future, through complex ranges of processes that flow together to construct a single consistent, coherent, albeit uncertain, interactive and multifaceted time-space system (Graham, 1998). These ceaseless processes are the core of spontaneous, everyday urban development. Grasping the scope of urban development occurs as a major challenge for modern science about cities.

My intention is not to produce another pattern applicable to certain cities to a certain extent, but rather to apprehend a process that embodies the complexity and dynamics of the mentioned relations in a transparent way. This framework of research enables to ponder upon means of generating a vibrant and fluid context open to permanent transformations and, most importantly, to grasp the idea of an adjusted and balanced model, adaptive to changing views and situations of accelerating urban development. (Portugali Complexity cognition and the city). This to be achieved requires supple approaches which should aim at explaining the correlations of various urban elements and to better correspond to the socio-spatial patterns of the range of urban environments. In such a plenitude of factors, I have chosen case study as an adequate research method and a neighbourhood as a relevant level of analysis.

Dynamic urban context is a complex phenomenon with a plenitude of data. Case study research method enables close, in-depth and holistic examination of a great deal of data, but requires a bounded environment in order to accurately describe and illustrate such a context and to use it for broader interpretations and demystification of modern cities. Specifying physical limits is not in itself enough for circumscribing the identified complexity of urban transitions, the issue of scale is also at stake. In urban terms, different spatial and social elements are intensified or muted at different levels (global, national, regional, local). In order to acquire active follow-up, interpretation and assessment of urban issues, it is important to define a representative environment, a robust source of prominent urban "processes". Thereupon, I argue for a neighbourhood level of analysis, because it may become a paradigm for complexity and dynamics of modern urban context. It serves as an urban micro environment, which eventually increases the body of knowledge on cities concerning the methodologies used to deal with urban development and corresponding urban transitions.

"The contemporary city is a variegated and multiplex entity - a juxtaposition of contradictions and diversities, the theatre of life itself" (Amin and Graham, 1997).

1.1.1 Background

At the beginning of the 21st century, the world experienced a progressive reorganization at an economic, political and social level: profit maximization, globalization of urban pro-

cesses and the devastating history of deindustrialization and dematerialization of the world (Harvey 2012). Nowadays, while about 50 percent of the world population lives in urban environments (United Nations 2008), the question of techniques and methodologies for urban development research and analyses should undoubtedly address these major shifts in urban life and contemporary cities (Healey 1997).

Cities are rather primary venues, power poles and capacity builders of economic, social and cultural development at stake in modern societies (Castells, 1998). Conversely, cities are dynamic and diverse urban entities that are given to shaping their autonomous and innovative future on the basis of human resources and creative human potential (Knight and Gappert, 1989; Yigitcanlar, 2008). The prosperity of cities depends on how competitive they are on a global economic scale, how flexible they are in terms of adjusting to current trends and needs, and how fertile they are for the development of knowledge and the application of innovation. These major uncertainties of contemporary life, created mainly but not exclusively by the current method of production and management, are acutely symbolized by concerns about urban development (Healey 1997).

Urban development is widely accepted even though also contested category usually associated with urbanisation processes in "so called" developing countries. Lots of professionals in urban research and practice use the term, not to mention the great number of people around the world affected by their work. Nevertheless, the notion of the word "development" itself means different things to most of them. However, traditional and widespread interpretation comply with the western paradigm of development: modernisation and economic growth ref. Interpreted in this way, the notion of urban development actually promotes the leading hierarchies and categorization of cities in the world, based on the impact of globalization, new transnational economic progress and networking of cities ref. Both of these approaches impose the hierarchical relation among them, as Jennifer Robinson (2006) bluntly puts it, "while some are exemplars and others are imitators". Besides, the chronological paradigm of western urban planning dilutes when it is spatially translated to these qualitatively different environments (Robinson 2002), causing them to lose their substance as an urban phenomenon through the ill-decoded application of western patterns (Bolay 2004). In addition, modern urban thought could be stuck in this rut, inducing negative background effects on the whole gamut of urban activities (Amin et al. 1997), causing urban conflicts to thrive on the basis of inequitable power relationships, and cultural differences, as they develop from an individual level towards a socio-urban dimension (UN Habitat 2009).

In this respect, Jennifer Robinson summarizes that categorization and differentiation of cities, according to Modernity and Development, are a pure product of colonial past. This actually means that in the scope of widely praised universal image of "cityness" as the final goal of the ambition of cities, successful examples of cities are included inside these categories. World cities are defined in relation to their regional, national and international influence inside a global economy where the country categorization is transferred into this world city categorization ref. Conversely, global cities are categorized according to their in-

dustrial and communication potential of transnational management and control ref. They both focus on the characteristics of cities and potentials in the scope of global economy, its flows and networks. This approach has proved to be insufficient, exclusive and restrictive for cities in less developed countries, if we keep up with the same terminology at the national level. On the other hand, cities which are outside these categorizations but with a same ambition and vision of "cityness" are regarded as third World or developing cities. Consequently, there are even more categorizations such as those of western, wealthy, third world, developed and developing cities. However, with all of them together, there is still a vast number of cities which are left out and with barely any possibility to ever fit in any of the categories (Robinson, 2006).

"Ordinary cities also emerge from a post-colonial critique of urban studies and signal a new era for urban studies research characterised by a more cosmopolitan approach to uderstanding cityness and city futures. This can underpin a field of study that encompasses all cities and that distributes the difference amongst cities as diversity rather than as hierarchical categories. It is the ordinary city, then, that comes into view within a postcolonialised urban studies" (Robinson, 2006).

This brilliant insight put forward by Jennifer Robinson in her book "Ordinary cities between modernity and development" questions the geopolitics of urban theory and urban development (Fraser 2006). Taken from this standpoint, each and every city is an indicator of what an urbanized society is and what course of urban development it may take. My research scope in this thesis perseveres with post-colonial critique of urban studies and the notion of ordinary cities, introduced by Amin and Graham (1997) and further developed by Robinson (2002). This concept approaches the knowledge of diversity and complexity that exists within the world and "distributes the differences amongst cities as diversity rather than as hierarchical category" Robinson (2002).

Ordinary cities approach provides unique assemblage of internally different, distinctive and context-based urban transitions as well as overlapping space-, time- and relation- networks across cities. In other words, it is not only necessary to examine the ways in which countries/cities interface with the global economy, but also social, cultural and historical legacies that each country/city carries into the era of globalization. Within such domain for explanations, this thesis revolves around the interpretation of urban development as an answer to the question "how can cities facilitate urban transitions while also maintaining the culture and values of the community itself?" (ref article: Does Placemaking Cause Gentrification? Its Complicated.) The idea of indicating what encompasses urban development of an ordinary city lead to identifying its internal and external influences that constitute the core of maintenance, transformation or change processes in an urban system of a city, when treated equally within the global hierarchy of cities (Robinson 2002).

This approach makes a worldwide, broad, general and mutable process of urban development actually connected to place - making an actual urban setting a vital factor for case specific uncertainties and a polygon for transformation of global aspects to meet

local specifications. My aim is to move away from the general theoretical research into an on-site practice-based investigation. Consequently, this research project attempts to show how the real-life focus on Savamala neighbourhood in Belgrade eventually increases the body of knowledge on post-socialist urban environment and the methods used to deal with complex and dynamic urban context. Complying with "ordinary cities" approach, I would like to elaborate that post-socialist cities in transitional countries meet extraordinary difficulties when copying urban models from the West. The cause is found in the lack of the institutional infrastructure and cultural patterns essential for the functional unity present in western cities (Petrovic 2009). Furthermore, fundamentality and intensity of economic and political change in Balkan post-socialist countries may be a historic exemplary of social transition hard to find in a "typical" capitalist city (Sykora 1994). Its internal environment is in a state of flux, with the rapid adjustment of the physical, economic, social, and political structures of the city itself (Sykola, 1999).

Included in this range of spatially and economically turbulent surroundings, post-socialist cities in transitional countries have undergone highly dramatic change in political, economic and social terms. The mayor consequences of such transition introduce, on one hand, the disastrous effects of increasing social polarization (inequity), deinstitutionalization of socio-spatial practices (informality) and unfair wealth redistribution (poverty). On the other, the huge socio-cultural base inherited from the socialist period with centralised and authoritarian practices dominate post-scoialist urban governance. This has had a profound influence on the spatial adaptation and social repositioning of post-socialist cities.

Turbulent social times, such as the disintegration of Yugoslavias political system and the introduction of new context of market economy, decentralized administrative powers and a lack of investment and resources are reflected in chaotic urban development pattern. Urban systems of post-socialist cities are highly susceptible to tense on-going transformations, diverse but reciprocal in their nature: economic transformations (transformation of production and consumption in relation to space, income polarization and poverty), political transformations (urban governance, political voluntarism, participation and decentralization), spatial transformations (demographic trend and distribution of functions) and social transformations (social exclusion-inclusion, social activism and informality). In other words, what proceeded after the end of the socialist era is a neoliberal model of urban planning with the supremacy of market-oriented solutions for urban problems (Sager 2011). Conversely, with the huge socio-cultural base inherited from the socialist period, cities in transitional countries have continued to be centres of economic growth with a variety of services, expansion, technological innovation and cultural diversity. While some trends and directions within these transformations are clear and defined, uncertainty dominates decision making and implementation in the turbulent environment of post-socialist cities (Nedovic-Budic 2001). Therefore, the post-socialist period in these cities contains prevailing characteristics of the disintegration of the preceding system rather than a coherent vision of what should follow.

In practice these conditions ended by having the strategic plan as an advisory long-term

urban vision, but leaving the real actions and decision making to political and market forces. Thenceforth, urban development of post-socialist cities most often has exceeded and diluted the common strategic framework defined from top-down: to establish clear links between the process of strategy development, its institutional framework, the hierarchical structure of long-term and short-term objectives of all actors involved, and the real-time changes happening simultaneously in an urban environment. The major characteristics of post-socialist urban development are: a multitude of actors, various economic, social and political interests, social aspects and fragmentation of urban spaces. Consequently, post-socialist cities lack complex, operational logistics (check!!!Repetti et al. 2010) to link top-down changes to bottom-up interventions in urban systems. There exists an growing discrepancy between the national and global levels, on one side, and city and neighbourhood levels, on the other.

The conceptual framework explained herein pinpoints the blurred and askew morphology of post-socialist cities which requires dynamic solutions in order to skip the classical, western procedure of urban formation and development. Consequently, this particular context shows the increased need for proper techniques that are spatially and temporally adjusted to current issues. The far-reaching goal actually is to transform the negative side effects of imitating and lagging behind the western urbanization model and those of the accelerating globalization into a development impetus suited to these environments.

Urban development of post-socialist cities is perceived as a dynamic concept, a multidimensional integrated system composed of qualitatively different and semi-autonomous processes, with the inclining tendency to improve the economic, social, demographic, political and technological state of an urban environment. In view of all this, we need an overarching theory of urban development that can encompass all discrepant decision making forces: future-oriented urban projections (urban planning strategies), in situ transformation forces and potentials (urban transformations), and follow the creative paths of urban dwellers (participatory urban design activities) for imagining new urban futures. The question of facilitating and localizing urban transitions rests with overlapping urban scenarios from dissonant levels of decision making, tracking cultural identities, requirements and needs of all urban actors, and, in general, indicating contextual processes of maintenance, transformation and change of an urban system.

1.1.2 Problem statement

The focus of this thesis is urban complexity and dynamics of post-socialist cities. The issue is not addressed as a problem to solve, but rather as a moving target for an exploratory observation of the way how cities function and how various urban transitions condition urban development of post-socialist cities.

Post-socialist cities are treated herein as a range of qualitatively distinctive cities that "deal differently with their difference" ref. In their incompleteness, plurality and informality, post-socialist cities in transitional countries represent dynamic and diverse arenas of contemporary urban life, experience and theory. Included in this range of spatially

and economically developing surroundings, transitional countries in Central and Eastern Europe (CEE) have undergone highly dramatic change in political, economic and social terms. The disintegration of Yugoslavias socialist system led to the destabilization of the institutions and the social value system in Serbia. Such confusing political and social circumstances have deprived an average citizen of sufficient information about the possibilities and tools to take an active part in the development of their city. These factors provoked a legal void susceptible to shady deals and questionable public-private partnerships (illegality); a lack of strategically proactive urban governance, which resulted in tolerance to illegal building practices (informality); the increasing social polarization (inequity); and poverty in this region, the number of poor people had reached 100 million in CEE by 2001 (Tsenkova 2006a). This rather organic path of urban development leads to the classifying of post-socialist cities in transitional countries as unregulated capitalist cities (investment-led) with third world urban development elements (substantial illegal activities and informal markets) (Petrovic 2009).

Conditioned by the geographic location of Serbia (CEE), murky circumstances of transition (towards liberal market, private property, profit motive and consumer sovereignty) are followed by a set of decentralization and democratization protocols for joining EU, availability of European research and civil sector funds, as well as the promotion of participation and engagement from the ground up ref. Having said that, the lack of successful urban planning models and actions make possible that the rising economy of social exchange and local capacity building could contribute to an improvement of life and functionality of urban structures and systems, and effectively address the tensions between top-down and bottom-up urban planning in a post-socialist city. Tracing institutional articulation of post-socialist context involves structural analysis of administrative procedures and content analysis of policy agendas. It serves to systematically deconstruct local urban governance in terms of political, economic and cultural aspects of transition with a multitude of actors, variety of interests, conflicted strategies and fragmented implementation. In the long run, the identification of relations and influences on post-socialist urban governance examines how urban actors, space and regulatory framework rely on planning and decision support systems as means to forecast and orchestrate any movement of the system. In this manner, any element of urban systems, human or not, is attributed agency.

Conversely, under the hood of scientific neutrality, urban development concept is critically approached, broken down and recomposed as a process of urban transitions, not as an indicator or the final product in urban practice. Urban development of post-socialist cities is seen as a complex, multifaceted network of urban transitions that evidence:

1. the level of urbanity - qualitative processes of maintenance, transformation and changing processes of an urban system;

2. legitimacy of different layers of urban decision making top-down urban planning strategies, tactical urban transformations, and bottom-up participatory activities;

3. urban key agents - constitutive elements for the morphology of urban decision making;

4. numerous urban conflicts, social practices and contextual resources resulted from the incompleteness, plurality and informality of post-socialist cities.

1.2 Thesis Aims and Scope

research scope: grasp the actual urban development process in cities
research impact: the quality of an urban system generates a vibrant and fluid context open to permanent transitions gives rise to potential to originate diverse opportunities for new rounds of exchanges among research, innovation, action and development (Bolay et al. 2011).

1.2.1 Research Objectives

Overall objective: encompassing complexity and dynamics of urban transitions as an urban development indicator at the local level in a rather transparent way

RO1

re-formulate urban development concept in terms of urban transitions to fit the idea of dynamic state of an ordinary city in its full complexity

- RO1a: identify what urban system complexity is
- RO1b: map urban networks
- RO1c: trace the morphology of decision making
- RO1d: define dynamic state of a complex urban system in an ordinary city - description of empirical reality of urban networks and processes

RO2

gain an in-depth understanding of the level of urbanity in an ordinary city as an indicator of urban dynamics

- RO2a: elaborate the level of urbanity
- RO2b: connect the level of urbanity to urban dynamics
-
- RO2d: contextualize the level of urbanity categories in post-socialist cities

RO3

conceptualize a methodological hybrid for tracing urban complexity and dynamics

- RO3a: specify a neighbourhood level of analysis
- RO3b: describe urban complexity - networks - to indicate the morphology of urban decision making
- RO3c: trace the level of urbanity - urban processes - to indicate urban dynamic
- RO3d: proceduralize urban transitions for circumscribing urban development process

1.2.2 Overall Research Question

Overall research question: HOW To investigate post-socialist cities in order to reinvent a more inclusive and flexible approach to understanding Urban development dynamics engaging the complexity of an urban context?

1.2.3 Main Concepts

The city is regarded as a geographically condensed, highly structured economic, and the most complex social phenomenon (Mumford 1961). "Time" and "social interactions", in the modern qualitative sense of the term, are now the leading determinant for the way urban systems function (ref SNF1). Urban structures interact in an environment that is constantly undergoing transitions, as they themselves are not permanent and unchangeable. As a result, this constantly influences and changes our point of view, influencing our way of solving problems that exist in our environment, as we and all of our surroundings are in a constant state of flux (Harvey 2003). This sort of relativism, where the interactions of as many elements as they emerge determine the context in which they are placed, should be a formative factor in addressing urban complexity and dynamics in terms of urban development prospects and circumstances. The theoretical stronghold of this thesis is the interpretation of urban development, namely going away from qualitative notion of the term and indicate its operational equivalence with more neutral and relativistic idea of urban transitions. Urban transitions encompass complexity and dynamics of an urban environment within the combination of urbanity (description of the state of an urban system and the agency of its transitions) and urban decision making (sorting urban elements and transitions according to the layers of interventions - planning, investment-based transformations, and participatory activities).

Urban development is rather a generic term for circumscribing the progress of and in cities addressed in the blurred field of practice-oriented research World Bank ref. Nowadays, when cities are primary venues, power poles and capacity builders (Castells, 1998), the theorem that the growth of cities expand opportunities seems to hold up. Moreover, urban development concept has been easily mixed up with urbanization and economic

growth and more often ruled out by the appealing righteousness of sustainable development trends ref. In this sense, urban development has been either patterned or predicted referring to whether it is the part of a model or a project for a city or an urban environment. However, in both cases it implies change. The programmed change is usually assumed positive in its intention or marked as developmental if it has positive economic or, less often, social outcomes ref. In reality urban change is most often the consequence of power struggle and has conflictive outcomes on different stakeholder groups Fainstein 2010 and else ref. Yet it has been bounded only spatially - referring to a city or a part of the city. Not to mention that today's solution may be the conflict of tomorrow Holden 2015, ref. Therefore, this thesis approaches urban development concept in relativistic terms(explain time-space concept in a footnote. In this sense, urban development is applied as an overarching codifier for urban complexity bounded rather as a comprehensive overlay for urban dynamics, not as its qualitative, prognostic nor delineative indicator. In other words, urban development is circumscribed herein by a set of premises as follows:

- Urban development is treated as a process of urban transitions over time;
- Urban transitions indicate every socio-spatial reference that affects an urban system;
- Urban transition is the consequence of urban decision making;
- Urban transition affect the range of human and non-human elements of an urban environment;

This interpretation of urban development not only emphasizes its processual nature, but also moves away from its project- or model-based feature by incorporating locally contingent socio-spatial patterns (Guy and Henneberry 2000) and non-human basis of urban agency(Healey 1991 add others). The units of analysis are temporarily and spatially bounded urban systems, either whole cities or its conventional parts (ref). **Socio-spatial patterns of urban transitions** is a provisory term that contributes to develop an understanding of development processes beyond mere strategic economic and social framing of needs and events and taking into account sporadic and spontaneous agencies of urban systems. The sensitivity to this range of needs, events and agencies means that whatever happens refer to the state of an urban system - the processes of maintenance, transformation and/or change which we define as urban transitions ref. Accordingly, the complexity of an urban system, which involves the unpredictable and uncertain in its structure, is bridged by emphasizing the reference to its state and corresponding urban dynamics. This approach indicates political aspect of urban processes not that of urban structures. Moreover, it coincides with the political view of urban planning ref, though it takes a more inclusive turn with all the agents of interventions, relations and events taken into account, not withstanding their nature, function or purpose. In other words, urban development becomes reconfigured to a fine-grained urban dynamics, adding up elements to the battlefield of urban decision making, while it enables labeling the complexity of urban systems. In general, the important research challenge of this thesis is testing the legitimacy of

urban decision making for urban development. The issue at stake is to encompass planning, power struggle, economic interests, design and participation in an overarching urban decision making procedure. Namely, the source of urban transitions are decisions made through these various top down, bottom up and interest-based interventions, relations and events. Political and governance practices are open and susceptible to choice, through contestation and struggle, and accident, historical or natural, "but decisions become locked in" and instigate urban transitions - maintenance, transformation or change of the current state of an urban system (Hudson and Leftwich 2014). **The morphology or urban decision making** therefore comprises and reconciles all its different layers that spread urban transitions through and across an urban system and engages certain level of forethought. These layers are: top-down urban planning strategies, tactical urban transformations, and bottom-up participatory activities recognized on site ref. They serve to enclose the historical continuum of global urban trends and patterns in a local socio-spatial framework and translate them into an internal, on-going interaction of individuals or constituted groups. Identified overarching decision making procedure acknowledges human agency. Through these interactions, urban actors initiate the process of their integration into the environment through an appropriation and transformation of space. In this sense, we could refer to the classical vision upon cities as a setting that consists of: venues (their spatial and built environment) for social interactions (economic, political and cultural), social practices (policies and processes) and reproduction of social order of all urban actors (Firmino et al. 2008). The way cities function shapes the expectations and actions of all the urban actors involved, who also influence the constitution of the city itself. The network of these internal and external influences between human and non-human elements engaged in urban transitions introduces urban agency as a property of all urban key elements. Henceforth, people (urban actors and stakeholders), objects (built environment), territories (space), institutions (regulatory framework), infrastructure and social aspects (political, economic and cultural circumstances) are all correlated through the morphology of urban decision making. They are also granted agency in urban transition where they figure as **urban key agents** (Firmino et al., 2008) and ref. This multitude and diversity of elements is an urban system and, while emboding its dynamic state, it is rather blackboxing the agency of urban dynamics than decoding it.

Urbanity is another rather blurry concept, applied often in architectural research and practice with the potential for decoding urban dynamics. In general terms, it relies on urban complexity as an active attribute of the overall state of an urban environment (Canuto et al. 2012). Cities are simultaneously the source of both problems and solutions of contemporary life. Cities are the polygon of contemporary decision making. Socio-spatial patterns of urban transitions bend the way how decision making layers address urbanity as its constitutive reality and its ultimate positive goal ref. The conceptual framework of urbanity examines the urban key agents, numerous urban conflicts, social practices and contextual resources and how - in their incompleteness, plurality and informality - they form urban transitions.

Moreover, this thesis argues that an overarching definition of urbanity concept improve scientific capacity for grasping urban dynamics. It elaborates how the level of urbanity figures as an indicator for contextual processes of maintenance, transformation and change of an urban system, incorporating simultaneously its state and the transitions. The relationship between the physicality of urban form and the social components of urban life generates the level of urbanity - the quality of continuous harmonization of the variety of structural elements, social factors and vested interests existing in an urban environment (Holanda 2002, Canuto et al. 2012). Moreover, all these urban key elements are assumed to be equal agents in the continuous process of urban development that has been marked by maintenance, transformation and change of the urban system in order to improve its living conditions and facilitate social interactions.

1.2.4 Methodological justification

Following contemporary relativist trends for rethinking space, time, globalization and cities, future research challenge can be defined as "visualizing cities as unformed, unorganized, non-stratified, always in the process of formation and deformation, eluding fixed categories, transient nomad space-time that does not dissect the city into either segments and things or structures and processes" (Smith 2003:574). Accordingly, a corresponding change in approaching urban development can then be addressed by heterogeneous and iterative approach that has surpassed the perception of cities as merely economic, social and cultural venues treating them as complex and dynamic urban systems. In these circumstances it is necessary to apply proper techniques and methodologies for urban research and analyses which encompass complexity and dynamics of cities for the improvement of their living conditions and the facilitation of social interactions in the process of urban development.

Bearing in mind the complexity of such relativist approach to the urban and the necessity of practice-oriented knowledge. This thesis proposes a mixed-method case-study approach (check Flyvbjerg et al, 2012). According to Kuhn's paradigm shift (1962) science about the city is constantly swinging as a pendulum between scientific and hermeneutics approach - quantitative analysis vs. descriptive study (Portugali Complexity Cognition and the City). Mixed research method in this case provides complementary information and in-depth knowledge of the problem. However, it has been solely moulded according to qualitative data sets. The research is influenced by the choice of an innovative methodological approach, but the set of qualitative techniques and their sequence are guided by the requirements of the research problem check ref(Flyvbjerg, 2004; Aitken, 2010).

The choice of the methodologies is justified by the process-driven, correlational research design and the exploratory character of the research itself. This thesis suggests the potential of the combination of multi-agent system (MAS) and actor-network theory (ANT) methodologies. ANT has been extensively applied in sociology for the analysis of cities and the urban ref, while MAS itself is more mathematical-computational method for agent-based modellings ref. MAS-ANT hybrid methodology herein serves to capture local

urban dynamics and reframe complexity of permanent urban transitions for urban development. This argument is built on the usefulness of ANT for describing urban reality. ANT approach provides a potential capacity to afford openness and flexibility necessary for founding logical argumentation before tracing urban dynamics ref. It will be then demonstrated that MAS adds the framework of action when applied over ANT. Finally, its application is presented on the case study of a post-socialist neighbourhood in Belgrade. In this case, the researcher had the opportunity to be educated in Belgrade and to work in the architectural production in the Serbian capital. Therefore, the researcher (me) is to some extent familiar with the local context and has possibilities to access certain data. This thesis adopted MAS-ANT methodology in order to:

1. describe complex urban reality (urban agency, decision making) in a post-socialist city (ANT);
2. understand how the level of urbanity path serves for tracking socio-spatial patterns of transition in Belgrade, Serbia (MAS)
3. indicate the processes of urban transitions (ANT+MAS)

DIAGRAM

1.3 Contribution

Relate Contribution to Conclusions

The idea is to create visual interpretations that can be easily computerize (html5), and then easily changed. This enables the continuous generalizations and conclusions drawing and the introduction and description of new elements.

A by-product would be this new definition of urbanity and urban development.

This proposal aims to define a method of solving concrete problems through a process of understanding and dealing with current difficulties as they emerge and evolve.

elaborate inappropriateness of urban development concept for describing and guiding urban processes in cities outside the Global North. Especially not for tracing and directing urban transitions in the way that brings social and environmentally sustainable benefits to the inhabitants and the urban environment.

However, it is a widespread rarely criticised and unbeatable concept, especially in practice and practice-based research. Without delving into hidden motives and circumstances (economic, political, colonial), as this is rather an architectural approach to the urban, I use redefine the core of the concept, but keep its scope and aim to produce an operational methodological framework for practical investigations of the pallette of different cities around the world.

1.4 Thesis Structure

The study is structured in seven chapters.

This chapter sets the path for reaching the research objectives, its crucial role is to provide the basic understanding and scientific justification of what forms and conditions urban complexity and dynamics and how the problem is approached within the limits of this research. The next **CHAPTER 2** contains an extensive literature review concerning the applicable concepts and the chosen methodologies. These concepts form the essence for categorizations with the chosen methods. The conceptual and methodological parts build the theoretical framework for this thesis.

CHAPTER 3 relies on the primary statements from this introductory chapter, builds on the range of indicators identified within the theoretical framework and further elaborates the methodological approach and the scientific argument of the research.

In order to substantiate proposed hypothesis, presented theoretical framework will be tested on an elucidated case study. In **CHAPTER 4** the choice of Savamala neighbourhood in Belgrade is clarified and data collection procedures are summarized in the form of a linear and chronological case study report.

The following chapter moves forward to hypothesis testing and consecutive application of the chosen research methodologies. Data analysis with Actor-network theory is the core of **CHAPTER 5**.

CHAPTER 6 deals with system building according to the postulates of Multi-Agent system.

CHAPTER 7 presents the actual hybridization of two methods.

In **CHAPTER 8** the performed research is pulled together. The resulting discussion is drawn upon the outlined background information on the theoretical framework, the deconstructed MAS-ANT methodological hybrid, and collected and analysed data on the cases study from the previous chapters. Based on these results, this thesis is concluded on two separate levels, regarding research and theoretical framework.

Chapter 2

Literature Review

This chapter outlines xxxx. ...

2.1 Conceptual Framework

xxxxxxxxxxxxxx

2.1.1 New conceptualization of urban development

At the beginning of the 21st century, the world experienced a progressive reorganization at an economic, political and social level: profit maximization, globalization of urban processes and the devastating history of deindustrialization (Harvey 2012) and dematerialization of the world. The question of techniques and methodologies for urban development research and analyses should undoubtedly address these major shifts in urban life and contemporary cities (Healey 1997).

Cities are no longer perceived as geographical entities with their distinct identities. The urban now is rather concentration of multiple socio-spatial circuits, diverse cultural hybrids, sources of economic dynamism and complex range of multiple processes that flow together to construct a consistent, coherent, albeit multifaceted time-space system (Graham 1998). The city is perceived as a complex set where past, present and future converge upon one another; a dynamic entity which embodies the social narrative and the attempts to govern its social interactions and spatial distribution i.e. urban development. In political terms, urban development is anything what may happen to a city in terms of maintenance, transformation and change of its original state (Friedmann 1987). Such a context implies that physical spaces are constantly intermingling with social constructions of these spaces (Firmino et al. 2008), annihilating the idea that a place is a single material object and transforming it into a space of flows (Castells 1998). The city concept is thereafter redirected from spatially bounded, people-centred phenomenon to dynamic and complex urban systems, which in their incompleteness and indeterminacy, are stages where all urban elements participate in their "making", changing and transforming. In other words, a city is perceived as a nexus that balances relational proximity in a fast-moving world with time-space extensibility and all human actors and material objects engaged in networks

extended beyond the immediate corporeal environment (Graham and Marvin 2001).
Thus, it is necessary to shift the deterministic concept of urban development to a more comprehensive vision that considers complex networks and their dynamic interfaces that generate better understanding and strategizing of urban development (Huang 2012). Apart from the confusing mix of global and local influences, the complexity of such stand-alone artefacts is encumbered with layers of infrastructure that progressively interweave and infiltrate urban systems, life and culture in cities (Graham 2001, Portugali 2011). The powers of such networking support a complex restructuring of urban elements, along with a capacity for recombining economic, political, cultural, technical or natural factors (Murdoch 1998). Such urban heterogeneity consists of operationalization, interrelation and interaction of socio-technical assemblies within a city (Graham and Marvin 2001) . These become extended over the times and spaces of urban life (Mitchell 1996) and offer us an opportunity to construct dynamic, sophisticated and synthesised approaches to contemporary urban development . Consequently, cities nowadays are in a constant state of flux, with the rapid adjustment of its physical, economic, social, and political structures (Sykola 1999) to the information flows and infrastructural scapes, so that the urban present is not any more attributed only to spatial forms, economic units and cultural formations but also to integral and complex socio-material and sociotechnical systems in cities (Farias and Bender 2011).
The concept of progress is central to modern society and it is orientated towards a positive vision of the future. In an urban scope, this concept corresponds to that of risk, where the control of all future events is calculable and predictable in probabilistic terms. This new concept of urban planning is based on the notion of an open-ended future, which implies that uncertainty must be accepted and managed, authorities and actual urban actors should be ready for new requirements and renewability as conditions change, and professionals are to increase their knowledge of risk and vulnerability in urban environments. In this sense, the planning of discourse relates to a master narrative of modernity, including ideas of rationality, objectivity, scientific evidence, values and possible control through normativity.
There are different and numerous interpretations of what is and should be urban development, such as (Evropski regionalizam 1, World Bank and find other references):

- the course of a culture
- meeting the needs of human and natural worlds
- economic growth
- "right to development" between the developed and developing
- modernization
- emphasize raising the living standards by addressing issues of health and safety, inclusion and equity

Robinson (2006) clarifies her cosmopolitan tactics for surpassing hierarchical categorization of cities in the world, which in terms modernity and development of kept them apart. Her main point is to avoid the hegemony of western urban theory, as well as the growing strength of a discourse of development, which from 1970s onward has been emphasizing the differences between cities in the west and elsewhere, by:

An Urban Development Process in an Ordinary City

1. Dislocating accounts of urban modernity from the big cities of the west which claims to be its originator
2. Tracking and gather differences within the world of cities in order to justify that people in different places have invented new ways of urban life and their particular production and circulation of novelty, innovation and new fashions
3. Enriching all cities with better future perspective depending on their distinctiveness and creative potential, without any hierarchical order among ordinary cities; they are all equal as sites of the production and circulation of modernity.

In many scientific studies, interest lies in ordinary city constant state of change: dynamics and the structure of complex systems.

acknowledge the role of agency, decision making and urbanity

2.1.2 The Constitution of Urban Key Agents/Urban Agency

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

Socio-spatial patterns of a post-socialist city

Sjoberg - theory on post-socialist

In such a situation, urban planning was not a priority (Sykola, 1999), and it was not considered effective for managing local urban issues (Maier, 1998; M. Vujoevi and Nedovi-Budi, 2006). Therefore, planning was narrowed down to just one technical issue and very few theoretical or general methodological research studies bothered to examine alternative planning modes in transition, apart from replications of the approaches taken by neo-liberal or institutional economies (Begovi, 1995).

Thus, the crucial failures of post-socialist urban planning have come about through the lack of consensus on priority goals, action-oriented programs of implementation and coordination of different levels, sectors and areas.

In transitional countries, the course of merging socialist and neoliberal socio-economic condition, regulatory practices and organizational solutions led to inefficiently operationalized and inconsistently formalized institutional reforms rather known as "growth without development" Vujosevic. The post-socialist urban governance fails substantially through the lack of consensus on priority goals, action-oriented implementation and horizontal and vertical coordination.

Due to these circumstances, the urban development of post-socialist cities is perceived as a multi-dimensional integrated system composed of qualitatively different and semi-autonomous processes, with the inclining tendency to improve the economic, social, demographic, political and technological state of an urban environment.

2.1.3 The Morphology of Urban Decision Making

On the contrary, according to one of the leading urban theories of David Harvey and Manuel Castells, urban planning cannot be seen as an autonomous process of spatial development, but rather it is situated in its political economic context and constantly overlaps current economic and social changes (Taylor, 2006). In other words, urban planning in practice is intrinsically connected to the property market (which in turn involves a particular political ideology) and this tends to maintain current social order (Dear and Scott, 1981; Taylor, 2006), both of which are grounded in the development and expansion of industrial capitalism, neo-liberalism and consumerism (Ellin, 1999; Harvey, 1989). In other words, urban areas are, and have always been, the spatial and symbolic manifestations of broader social forces (Giddens, 1992).

2.1.4 How to frame urbanity to grasp system dynamics

Side by side with the historical continuum of global development patterns, socio-political framework at the neighbourhood level is shaped by human integration into the local environment. Appropriations, adaptations and modifications of space are the main agencies of physical interventions, which are followed by continual adjustments of its political, economic, and cultural structures (Sykora 1999). This process captures the pace of change and the multi-layered nature of transformation, with the focus on transitions in local economy, society, system of governance and the spaces of production and consumption. A systematic approach to such dynamics should integrate different modi operandi, transcend multiple scales and recognize temporality of information, actions and intentions that are followed up by satisfactory results (Tardin 2014). In urban theory the concept of urbanity is used as a parameter for the quality of urban spaces (ref), and in this way, we argue, it grasps and operationalizes urban dynamics.

In this chapter, we will track the variety of definitions for urbanity, argue for its latest update in the course of Actor-network explanation and update it to better indicate the parameters of urban dynamics through the contextual processes of maintenance, transformation and change. We can distinguish two different standpoints on the matter sociological and architectural. Sociological approach in urban studies uses urbanity as an association to the city referring to its original definition from Oxford dictionary. This definition dates back to the 16th century French interpretation of latin word urbanitas. In this way urbanity is closely related to civility and indicates cultural dimension and symbolic infrastructure of cities (Zijderveld 2011). Conversely, urbanity concept for architectural research is generally the indicator of urban quality. For architects it sounds widespread and familiar at least in its normative sense as an articulated, zero-friction vision of urban

development (Hajer 1999, Wst 2005). However, the review of the literature on this matter shows that this concept is very often taken for granted and in architectural research used without explanations. On the one hand, several authors use the term for their analysis without clearly stating their understanding of it (ref). On the other, we deal with slight difference in individual clarifications from a number of authors.

From the historical viewpoint, the term urbanity is used as a qualitative indicator for cities and urban life. It has been a more common reference for German tradition of urban studies, policy and planning. In this scope, urbanity most often denote the urban way of life and properties of typical urban structures which historically pertain to the tradition of a good European city (Prigge 1996, Wust 2005, Lossau 2008). In this battle for dominance of either social or spatial reference, the first invokes socio-cultural dimension of cities (Durth 1987, Haussermann and Siebel 1997, Christiaanse 2000) while the second turns to their architectural and design qualities (Neuffer 1976). However, all of them agree to a certain point that acknowledging difference and heterogeneity as well as embracing fragmentation and contradictions in social and spatial sense are the prerogatives for accessible diversity and therefore quality of the urban (Durth 1986: 1838; Herterich, 1988: 273; Krmer-Badoni 1996: 75, Wust 2005, Marcus 2007).

The condensed meaning of urbanity as a structural continuity of spaces in cities has been adequate for application in urban design practice. This viewpoint was backed up by theories from Camillo Sit, Jane Jacobs, Kevin Lynch and Christopher Alexander (ref). This line of research has led to the formulation of parametric vision of urbanity as an architectural category for spatial configuration of urban spaces (ref). The idea of breaking urban space down into components is bounded up in space syntax set of theories and techniques. Nowadays, this is the major field for the practical application of the concept of urbanity. The most common definition of urbanity in space syntax domain explains it as the generic need for people and societies to access differences as a means for social, cultural and economic development (Marcus 2007:10). In this respect, the operational definition of urbanity stemms from its integration in urban morphology and refers to it as accessible diversity and efficient integration to locally capture the spatial capital (Marcus 2007). Such narrow-minded interpretation politicizes the term, artificially tames urban complexity, and debunks its relevance to interpret urban dynamics and to deal with diversity, the unexpected and the non-planned in cities (Groth and Corijn 2005, Wst 2005). Therefore, we would like to contest this reductionist view on urbanity as nothing more than an instrumentalized, aestheticizing perception filter (Mnkler 1989, Wst 2005).

Without close scrutiny of the adequacy of these polarized explanations, we address the potential of the classical notion of urbanity to stand for not a condition but a process (Hortmann 1990). It may incorporate contradictions of value and identities that make the urban system nurtured locally and open to constant, flexible, spontaneous transformation or change (Groth and Corijn 2005). Even in the scope of space syntax, there has been a recent tendency to explain urbanity as an experience that incorporates all human and non-human actors and to analyse it with ANT (Rheintantz 2012). Urban reality in this

way was amplified towards a heterogeneous, dynamic set of flows (deAguiar 2013).

If seen as a processual property, urbanity concept brings us back to the sociological interpretations of urban way of life and urban culture (Farias and Bender introduction). In the light of assemblage and ANT theory, urbanity is an immanent property that emerges within socio-spatial networks at multiple scales (Kamalipour and Peimani 2015). This approach emphasizes the idea that a city is just a fixed actualization of the urbanity in space-time (Farias and Bender p297). The biggest challenge for urban analysis, addressed by the practitioners of ANT, is the definition of rational urbanity offered by Spanish anthropologist Delgrade (Farias and Bender p211): immanent instability and effervescence of forms to minimal sociality based on constant movement, ambiguity and transitivity and on the principles of anonymity and indifference.

This rather contested and open-ended articulation of contemporary urbanity aims at balancing top-down, market and civic-based governance roles, responsibilities and outcomes within the interrelations of biophysical and sociocultural urban elements people and spaces, regulatory framework and urban structures (Groth and Corijn 2005, Tardin 2014, Holden et al 2015). The multifaceted character of man-nature and nature-culture interactions constitute urban dynamics over time (Tardin 2014). In these circumstances, identification of harmonized social practices defines the character of space and the corresponding agenda for social encounters.

Our line of research aims at combining parametric nature of urbanity with ANT description. In this way, the test of the urbanity level justifies opportunities for continuations, options, transitions and turnovers to reach the collective demand towards the common good in the public sphere (Holden et al. 2015:4). It has been widely accepted that spatial, social and human capital has been created from the accessible difference/discrepancy/change (Becker 1964; Coleman 1988) . Contextual resources are formed by making use of available social, human and spatial capital (Grnlund 2007). These resources reside in real and symbolic reconstructions and restructurings of everyday urban spaces and practices and could therefore be addressed as spatial capacities and social potentials on the local level (Swyngedouw and Kaika 2003). Benefitting from social practices maintain the urban system (Tardin 2014) and harnessing contextual resources indicate the possibility for transformations. Conversely, favouring dynamic, spontaneous nature of urban process propose positive vision of urban conflicts.

When defined as such, urbanity may serve as a valid scope for setting up an urban agenda of development that offers categories for restricting complexity towards a structural unity of urban key elements. The categorized urban reality enables tracking urban dynamics through the identification of social practices, contextual resources, and urban conflicts that reflect maintenance, transformation and change processes in urban systems. Bearing in mind this complex vision of urban reality, it is the micro level, in our case the neighbourhood, where the test of urbanity could find its expression to the fullest in terms of the societal challenges and the production of urban spaces (Blotevogel et al. 2008).

Network of All Active Agents and Contextual Resources

the relation between urban life and urban form creates potential (Marcus) level of urbanity broadens the opportunity for change (Marcus)

2.2 Epistemological Framework

Production of space is the core aim of architecture, a discipline focused on practice. Consequently, architectural approach urges for parameters, categories and structure for its practice-based analyses. In terms of methods, there has been a significant number of interdisciplinary, transdisciplinary and multidisciplinary endeavours in applied research with an architectural focus in urbanism (ref). What is more, applied fields of research acknowledge the use of methodological hybrids (Datta, 1994, De Lisle 2011). This has open doors for applied social sciences to investigate new methodological opportunities when confronted with complex and multiplex social phenomena (De Lisle 2011). Even more so as methodological and epistemological rigidity leads to ignoring the realities of the practical and cause catastrophic scientif

A very important issue of architectural approach for urban analysis is the added layer of societal challenges on the core of space production. We have recognized this socio-spatial mixture as urbanity. Following contemporary trends for labelling the complexity of urban dynamics, all human and material, social and technical elements are assumed to contribute together to continuous transitions. The approach with a potential capacity to afford such openness and flexibility is actor-network theory (ANT). Therefore, ANT has already been applied as the explanatory construct that studies associations and symmetrical relationality of all active elements of an urban environment (Faras and Bender 2011). The contribution of ANT for architectural analyses lies in: (1) the role of non-humans, (2) approaching the environment as a relational process, and (3) mapping the transitions through horizontal links and associations among actors (Latour 2005, ANT article). Although ANT enables exhaustive systematic description of urban dynamics, in concrete case studies it rarely brings up something new in terms of facts, analysis, conclusions. It provides a detailed description of confined urban environments, but meets its limits when confronted with complex real-life urban processes. Bearing in mind that this methodological approach hesitates to offer explanations and to analyse individual behaviours, it tend to fail on the operational level. In a nutshell, ANT urges for methodological revisions, adaptations or complements in order to facilitate a wider understanding of the undercover processes and mechanisms (ANT article).

The practical field of architectural research requires not only reliability and credibility of data, but also generalizability of the results. We have to consider that no single method is without its limitations, though to keep in mind not to limit the research to the shortcomings of only one method. Being aware of the advantages and shortcomings of ANT, we take into consideration mixed method approach in order to provide adequate scientific discourse and an operational framework for the research question.

A General overview of Methodologies for Methodologies for understanding urban development complexity and its dynamics

2.2.1 ANT in analysis of urban development

In recent urban studies, the grasped complexity and dynamics of networked urban system has been extensively reinterpreted by Latours Actor-network theory (ANT), with all human, social and technical elements which are symmetrically treated within a system. All these entities contribute together to a dynamic perpetual networking, where understanding of all phenomena, including the social ones, lies in the associations among them (Latour 2005). Differently put, it brings up the reproduction of inherent complexity and incompleteness of urban development in 3 gradual steps: (A) labelling all active elements of an urban system (B) identification of their roles, and (C) focusing on the associations among them (Table 1). The contribution of ANT lays in: (1) instating socio-material topology of urban networks, (2) navigating the interpretative dualism of urban theory (nature/society, local/global, action/structure), (3-3) elaborating the supremacy of associations that configure the relational understanding of the city, (3-4) overcoming spatial hegemony in complex urban reality, and above all (3-5) radicalisation of symmetry principle for human actions and non-human materials that allows tracing the consistency and extensibility of urban phenomena beyond its spatio-temporal manifestation (Latour 1993, Murdoch 1998, Farias and Bender 2011) (Table 1).

Even though human is still the essential, inseparable urban element, this blending establishes new interpretation of cities as composite entity where all objects (physical spaces and structures, tools, technologies, data, formulae and regulations, institutions and, of course, humans) are mutually constituting through enactment, interaction and translation of different elements (Faras and Bender 2011)In Latours (2005:71) words - "any thing that does modify a state of affairs by making a difference is an actor actor is granted activity by others, can be subject or object of an activity (Latour 1996). As such, the heterogeneous body of associations and symmetrical treatment of humans and non-humans contribute to place action outside the actors where [a]n actor... is not the source of an action but the moving target of a vast array of entities swarming toward it (Latour 2005:46). The figuration of a relation is what counts, not its nature, function or purpose; the network is established when arrangements between actors produce stable patterns of performance and practice (Smith 2003).

ANT methodology redraws principal urban theory concepts in actor-network terminology naming only a few: social order; scale, power, decision making, governance, urban development . The wide field of ANT application in urban research and practice addresses urban core by encompassing not only analytical views on theory and research (Boelens 2010), but also planning methodologies, policy and practice recommendations, and development prospects (Healey 2013). All these works adhere to the basic ANT principles: (1) treatment of material objects and representations through actor-networks; (2) reduction of well-known dualities and general concepts to in situ actors and networks; (3) the nature

and process of networking in terms of associations and translations (Table 1).

Being anchored in science and technology studies (STS), an early applications dealt with the nature of human/non-human exchange in mapping land cover projects and GIS allowing reconciling data with different ontologies and addressing "nodes, links and type of links" terminology f actor-networks (Comber et al. 2003). The analytical lenses in architectural, housing and planning studies have focused on materiality/artefacts/objects and up-to-date fruitful application of ANT: (1) for identifying non-human actors which happen to be missing, silenced, or even rendered invisible in practice of housing system, markets and policy (Gabriel and Jacobs 2008); (2) as an interpretative tool for processes and mechanisms under review distinguishes active mediators and passive intermediaries (Cowan et al. 2009); (3) as a theory of action for interpreting complex associations of people and things in architecture (Fallan 2011); (4) for demystifying the complexity of stabilizing/destabilizing object enactment mechanisms as a way to readdress the position of plan, implementation and design in governance and planning process (Duineveld et al. 2013); (5) for assessing relational aspect of assemblages as a way of explaining the influence of innovative tools for spreading explicit and tacit knowledge in planning and building sustainable cities (Georg 2015) (Table 1).

Furthermore, network related ANT framework has been stretched to analytical research tendencies toward urban practices. While Doak and Karadimitriou rely on Callons four steps in actor-network translations (Callon 1986) to map complex redevelopment processes once reduced to a set of associations in social relations and material objects and stabilized by intermediaries (Doak and Karadimitriou 2007); Holifield advocates for the version articulated by Latour (1996) and political usefulness of ANT suggest using intermediary/mediators role of risk assessment changes as a tool for "tracing the (contested) assembling without taking the existence of social relations" like capitalism and class "for granted" (2009:647). Similar stance has been taken by Boelens (2010) to promote relational view on spatial planning and how it interacts with behavioural urban regime in a way that ANT serves to identify actors and see how they organize from the ground up, and not being identified from above through an objective, vision or plan. ANT seems to have been recently gaining attention as part of the wider poststructuralist approach to cities (Smith 2013), therein further emphasizing its role in the process of production and acceptance of associations in terms of evaluating the positionality of researcher agency in human geography (Ruming 2009), and reflecting the process of production and acceptance of associations in urban enclaves (Wissink 2013).

Even though this post-structuralist ANT tenet mainly holds on flattened, network-oriented interpretation of system dynamics, it has been recently argued that the role of material objects must also be acknowledged in all its vigour and heterogeneity. Tracing back non-human elements from Latour to Foucault, it is obvious that material objects can be everything but passive and have been playing various social roles such as: (2-1) reflecting and maintaining social order, (2-2) facilitating social relations, (2-3) moral and political signposts, and (2-4) intermediaries of the social across space and time (Sayes 2014; Van

Assche et al. 2014) (Table 1). Henceforth, non-humans, when granted agency, become intermediaries/mediators and actors and their active engagement in urban development refers back to various levels of urban decision making: (X) upholding legitimacy of urban planning, (XX) underpinning multiple realities of real-estate interest, and (XXX) personalizing participatory urban transformations through actor-network perspective (Latour, 1996; Rydin, 2010; Latour et al., 2012; Van Assche et al. 2014) (Table 1).

ANT seems to continue to provide a conceptual framework for interpreting and guiding various ways of examining networks and has demonstrated a substantial coherence as a pragmatic approach to study actual practice in concrete sites and situations (Faras and Mtzel 2015:526), which affords focusing on description of performativity of the black-boxed social world through: (1) active role of non-humans, (2) sociology of translations (3) free associations, (4) inseparable actor-networks, (5) urban assemblages (Latour 1996). The concept of assemblages is aptly after capturing the complex relationality of dynamic urban system, though it fails to go beyond follow the actors technique of examining human-human-nonhuman interactions (Cowan et al. 2009) and to facilitate wider understanding of their normative and transformative nature (Gabriel and Jacobs 2008).

The rudimentary yet hyper dynamic circumstances of transitional societies offer an insight from within the network on how the body of norms, projections and structures of urban development unfold and upon the network of how the associations and translations of basic elements are formed and developed. In Serbia, urban planning framework withstands complex and elaborated institutional legacy yet holding rather a symbolic meaning (Nedovi-Budi 2001), fragmented and uncontrolled spatial transformations is governed by the constellation of different, often illegitimate, interests (Petrovic 2009), and, on site, the spectrum of active but powerless urban actors struggle to develop flexible social patterns and networks (Cvetinovic et al. 2013). Therefore, the case study of a post-socialist neighbourhood in the capital of Serbia is a good illustration for observing the relationships between top-down urban planning, interest-based urban transformations and bottom-up urban design activities. Moreover, very few methodological research studies bothered to examine urban development modalities in transition, apart from replications of the approaches taken by neo-liberal or institutional economies (Tsenkova 2007). In this respect, we aim to examine utility of ANT analysis for understanding developmental reality of Savamala neighbourhood in Belgrade.

2.2.2 Multi-Agent System

Very important for developing hybrid methodologies is the correspondence of the individual epistemological framework (ref). In this respect, we have realized that the dynamics of urban reality interpreted by ANT matches the concepts of agency, communication, cooperation and coordination of actions, where all elements influence each other simultaneously (Ferber 1999). This interpretation corresponds to the Multi-agent system (MAS) approach for complex computing systems.

This approach has already been applied in urbanism as a simplified problem solving strat-

egy primarily used for the urban decision making process. The multiple urban actors and stakeholders are converted into agents and used for simulating social organisations in which these agents are embedded (Bousquet et al. 2004). A multi-agent paradigm is actually very useful as structuring method that gradually builds the capacity and flexibility of systems. Its potential lies in analysing operationality, functionality, usability and extensibility of decision making mechanisms on urban land use and land cover (D. Brown et al. 2005), housing market dynamics (Diappi and Bolchi 2008) and Planning Support Systems (PSS) (Saarloos et al. 2008). MAS methodology is, in fact, a process generation tactic based on the principles of the ecosystem management (levelling, fluctuating, evolving). It applies the technique of categorizing the process infrastructure with apparatuses (set of fields of influences and major forces) and procedures (set of operational agencies) (Bousquet and Le Page 2004).

In general terms, MAS go along with ANT as it also aims to explore and understand the system, not to predict the future. However, the radical difference that contributes to its operationality is the focus on spatio-temporal dynamics. MAS tests the impact of interactions and structures that emerge from these interactions (Crooks, Patel, and Wise 2014). It can therefore serve to complement actor-networks (ANT) with a systematic framework where MAS analysis of agent behaviours provides fine tuning for qualitative discrepancies in the system.

The characteristics of MAS which are very useful for an operational update of ANT in exploring urban dynamics are: 1. Profiling elements as agents - the complex system is divided into subcategories, all of which are identified as independent subunit (agents) and then the activity among these subunits is coordinated. This allows for agent typology, an object-oriented approach and, as such, to distinguish actors, activities, ows, investments, facilities, regulations, rights, issues, forces, opportunities and constraints (Hopkins 1999; Saarloos et al. 2008). Distinguishing active-passive roles of the agents (proactivity, sensibility, capacity for interaction) may be crucial for representing real forces in an urban environment. 2. Describing the impact of procedures/agencies by categorizing the agents accordingly (Arsanjani et al. 2013). These agencies in our interpretations may be maintenance, transformation and change patterns. 3. Exploring a generative bottom-up typology of the system by defining rules that govern urban dynamics (Bretagnolle and Pumain 2010). Identification of the rules facilitates bridging the gap between top-down (evaluation of global trends) and bottom-up agent behaviours (local decisions which lead to emerging landscape patterns over time) (Bone et al. 2011). 4. Analysing complex systems through the agent-based view on urban decision making (links among agents' perceptions, representations and actions), control (hierarchical relations among agents) and communication (the syntax of the interaction between human decision-makers and biophysical changes) (Bousquet and Le Page 2004; D. G. Brown et al. 2008). 5. A multi-agent model for simulating urban dynamics - The aim is to understanding and exploring the system. The model is able to describe the emergent phenomenon and the dynamic behaviour of the system, and to draw some consequences on the environment and agent behaviour (system

dynamics) (Diappi and Bolchi 2008). The primary modules of such model are borrowed from its application for programming the systems in computer sciences and they envision: (1) E environment; (2) A - assembly of agents; (3) O - set of objects; (4) R - assembly of relations, the agents interaction with the environment (agent behaviour); (5) Op - assembly of operations making it possible for the agents (A) to perceive, produce, consume, transform and manipulate objects (O) through their relational behaviour (R); (6) U - laws of the universe, the reaction of the environment to this attempt of modification (Brown et al. 2005).

As elaborated in the previous chapter, the level of urbanity reflects multilateral, multichannel nature of cities that incites not only the constellation of social practices and harnessing contextual resources, but also evidences the production and the challenge of urban conflictual issues. A constant change of urban actors and urban structures also accelerates flows of social practices (policies, actions and processes) that together induce the complexity and diversity of city life, build urban experiences and urban capacity (Robinson 2006). Urban conflicts thrive on discriminatory power dynamics, clashes of cultural differences and a series of confrontations of opposing viewpoints within a city and they tend to progress from a personal level to a socio-urban dimension. Contextual resources are transformed agents enabling horizons of possibilities in spatial and social sense.

This is the theoretical ground on which our hybrid methodology identifies the concepts for its categorical convergence. For our case study, the combination of MAS and ANT methodological approaches involves taking into account all active agents regardless of their sort (ANT), their interdependencies and interconnections (ANT and MAS), and map their contributions (MAS) to continuations, transitions and turnovers of the urban development on the neighbourhood level.

2.3 Theoretical Framework

general - social sciences

urban studies

urban development

decision making

urbanity

Chapter 3

Methodology

Before delving into the data sampling and outcomes of this research, it is crucial to delineate the research process and procedures. Within the scope of this thesis, the research process involves the development of an organized body of knowledge on urban development processes in post-socialist cities. The aim of this chapter is to justify the choices made about what and how to research and the means to collect and analyze the data.
The chapter starts with a presentation of a larger framework where the research objectives presented in the introduction are conducted into the context-specific research questions and working hypotheses. In the following, an explanation for the choice of case study method, the criteria for the case study selection, as well as mixed method methodological approach are explicated, along with a brief overview of the methods and techniques used.

3.1 Research Framework

This thesis starts from the trendy term of urban development and cities in order to scrutinize urban complexity and dynamics in more operational, procedural manner. The research challenge of this thesis can be resumed to happen on multiple levels:

1. trace and put forward a value-neutral definition of urban development and identify the corresponding concepts that comply with it;

2. elaborate the validity of post-socialist neighbourhood as a case study that blends and exposes complexity and dynamics of modern urban context;

3. apply Actor-network theory framework for the descriptive analysis of a post-socialist neighbourhood;

4. construct MAS-ANT visual hermeneutic set, an engine for agent-based representations of urban dynamics.

The logistical construction of the inquiry involves the exploratory journey through facts, phenomena and theories of the conceptual framework within urban studies using the proposed methodological hybrid of Multi-agent system and Actor-network theory. The fundamental question stays the same: it is crucial to understand what is going on in

cities under the hood of urban development and especially how it is going on. Current body of knowledge on this matters gives us an input in the way how to transform and adapt general concepts presented herein into the indicators for complexity and dynamics of urban development processes. Theoretical framework has provided the foundation of facts, phenomena and theories in this direction, by acknowledging the conversion of general concepts into indicators as follows:

1. **Concepts into indicators**
    - urban development - dynamics of urban processes;
    - urban agency - urban key agents and urban networks;
    - urban decision making - the morphology of urban decision making layers: top-down, real estate, bottom up;
2. **Indicators into dependent variables**
    - dynamics of urban processes: urbanity and the morphology of urban decision making;
    - urbanity: socio-spatial patterns of urban transitions - urban transitions and socio-spatial patterns;
    - layers of urban decision making: urban key agents and urban networks;
    - urban transitions (maintenance, transformation and change processes): urban networks and socio-spatial patterns;
3. **Independent variables**
    - human and non-human agents;
    - urban networks;
    - socio-spatial patterns (social practices, urban conflicts, contextual resources);

Bearing in mind this extensive re-categorization and structuralization of urban development, MAS-ANT methodological hybrid proposes the road map for an inclusive and flexible approach for exploratory research - describing, tracing and representing dynamics of urban processes. Actor-network theory illustrate urban agency and decision making concepts while Multi-agent system operationalizes urbanity concept at an qualitative level and brings up the logics of the whole MAS-ANT procedure. Such provisional statements shed new light on the overall research questions proposed in the introduction and makes this thesis a methodological exploration.

Desired outcomes are dependent on the success of cross-pollination of concepts through MAS-ANT mixed research method. They are intended to influence both theoretical and practical domain. The research is guided in the way that it:

- questions the concepts of urban development, urbanity in general and urban decision making in post-socialist cities;

- proposes the terminology of transition which connects the processes of maintenance, transformation and change to urban conflicts, social practices and contextual resources at the local level;
- invents visual interpretations for practical uses.

Consequently, the research is built on 3 hypotheses. Each hypothesis addresses a theoretical and a methodological issue and they are drawn in an consecutive order. Hypotheses justification is built gradually on describing, exploring and proceduralizing in order to master complexity and dynamics of urban development processes.

3.1.1 Context-specific Research Questions

Overall research question: How To investigate socio-spatial patterns of post-socialist cities in order to reinvent a more inclusive and flexible approach to understanding Urban development processes engaging the complexity of an urban context?

RQ1

What constitutes an inclusive approach (complexity and dynamics) to urban development?

- RQ1a: (indicator: figuration of human and non-human elements as urban key agents) What constitutes spatial and social differences and specificity in an ordinary city?
- RQ1b: (indicator: urban networks of all human and non-human elements) How do cities as specific socio-spatial phenomena are manifested through urban dynamics?
- RQ1c: (indicator: morphology of urban decision making) Why does the morphology of urban decision-making determine pathways for urban development (urban transitions)?
- RQ1d: (indicator: urban transitions) How do urban transitions redefine/describe urban complexity and dynamics in terms of ordinary cities doctrine?

RQ2

Why do the level of urbanity traces determine pathways for urban development dynamics (urban transitions)?

- RQ2a: (indicator: socio-spatial patterns in terms of local urban conflicts, social practices and contextual resources) What are the conditions for specifying the level of urbanity in an ordinary city?
- RQ2b: (indicator: urban transitions) How to frame contextual processes to embody the dynamics of socio-spatial patterns in post-socialist cities?
- RQ2c: (indicator: urban dynamics) How does the level of urbanity systematically approach urban transitions?

RQ3

How to frame urban development process to embody complexity of urban systems and dynamics of urban transitions?

- RQ3a: Why does tracing the level of urbanity within the morphology of urban decision making embody the dynamics of urban transitions?
- RQ3b: How to frame the morphology of influences among different decision-making levels to describe/interpret the complexity of urban networks? H3a: decoding urban dynamics
- RQ3c: How to design the framework for action in order to operationalize urban development concept?

3.1.2 Research Hypotheses

Central hypothesis: Urban development process, interpreted through MAS-ANT methodological approach, embodies networks of urban key agents initialized by the morphology of urban decision making and determines its level of urbanity. Such relational system is a transparent engine for capturing the complexity and dynamics of urban transitions (urban development processes).

H1

H1: Actor-network theory (ANT) gives an exhaustive image of the complexity of an urban environment (neighbourhood) by providing openness and flexibility for describing urban processes: figuration of human/non-human agency, blurred and askew morphology of urban decision making and networks of all active urban key agents. Breaking down the morphology of influences among different decision-making layers (top-down urban planning, real estate transformations, bottom-up participatory activities) through mapping networks of interactions and interconnections among urban key agents (urban actors, built environment, space, regulatory framework, infrastructure, social practices) clarifies the agency of urban transitions - urban development processes - in a post-socialist city.

H2

H2: Urban development processes is determined by upgrading the level of urbanity. In value neutral sense, an overarching definition of the level of urbanity improves scientific capacity for grasping urban dynamics. The level of urbanity analysed through Multi-agent system (MAS) methodological approach indicates opportunities for urban transitions (maintenance, transformation, change) within socio-spatial patterns of an urban environment.

H3

H3: Complex urban development processes set as an iterative procedure of tracing the level of urbanity within the urban agency map reinterprets a multi-layered morphology of urban decision making in terms of system flexibility and dynamics (transformation, maintenance, and/or change). A methodological hybrid that combines Multi-agent system (MAS) and Actor-network theory (ANT) offers a framework for capturing urban dynamics and reframing urban complexity at the neighbourhood level.

3.2 Research Design

The aim of this section is to present the research reasoning and the adopted methodology, namely the logical sequence that connects empirical data to the research questions, hyptheses and their conclusions. In designing the research process, the defined goals are assumed as exploratory in its nature and methodological in terms of urban studies. The study is gradually built from specific observations of the literature towards an in-depth analysis. An exploratory standpoint is chosen with regard to theoretical and practical strivings of the research. This division is crucial for establishing the research methodology. The first (theoretical) relies on secondary data and inputs theoretical constructs, while the second (practical) provides primary data and empirical evidence from the study field.

The theoretical summary of urban development processes and the critical overview of the corresponding general concepts from urban theory (urbanity, urban decision making) is performed in the literature review in Chapter 2. It works as the structural catalyst for the chosen methodologies, as a kind of cross-pollination of concepts within the MAS-ANT methodological scope. On the other hand, MAS-ANT methodological approach is practically tested through the case study method. The application of this methodological hybrid in an hierarchical order (first ANT than MAS) for the analyses on the selected case study enables practice-oriented understanding of the situation in post-socialist neighbourhoods. Data display at the end gives an outline of the final blending of MAS and ANT methodologies and how they re-order and re-interpret the field data. This synthesis aims at transferring tacit into explicit knowledge about urban development processes in post-socialist neighbourhood in Belgrade.

The so-called cross-pollination procedure justifies proposed indicators (operational definitions of the concepts used) and enables connections among independent and dependent variables constructed within the research hypotheses. This is the core logical construction of the research inquiry. The research further follows an inductive method of reasoning within the case study. The point of departure was the case study. Interpretative and participatory action research methods are used for the data collection. These qualitative methods are overlapping case study in order to support proposed theoretical categories (indicators and variables). Principal data sources were documentaries, open-ended interviews, workshops, and questionnaires, which contributed to the structuralized description

of post-socialist empirical analysis performed with Actor-network theory (ANT). Multi-agent system (MAS) further made use of qualitative evidence to elaborate urban networks and the involvement of the key agents in urban affairs. Finally, MAS-ANT diagram displays the research results and facilitate interpretations of maintenance, transformation and change processes in an urban environment.
The main study focus is to invent a looping procedure which examines the relations among the variety of urban elements, explores the "specificities and globalities" of the particular context, and catalyzes the framework of action on the neighbourhood level. The reach of this research is incremental, open-ended procedure-building based on pragmatic approach through iterative and collaborative techniques towards:

1. understanding the phenomenon,
2. creation of an overall framework,
3. identifying the pattern of dynamic reality in terms of urban transitions.

The entry point for this methodological exploration is a case study.

3.2.1 Case study

This research adopted an in-dept case study inquiry as the adequate method for collection and framing of empirical data. Case study serves as a data collection engine, catalyser and boundary framework. Of particular importance is exploratory and descriptive character of the case study method. In general, the first captures the process, the second prepares and illustrates the incidence/prevalence of the phenomena (Yin 1994). These features provide us with a comprehensive framework for describing contemporary phenomena with extensive types and sources of data (Feagin, Orum and Sjoberg 19919). The goal is the holistic description of urban development and understanding the processes at stake over time (Wanborn 2010). In this manner, the case study takes embedded approach with multiple units of analysis (Scholz and Tietje, 2002; Yin 2009): urban key agents, the morphology of urban decision making, urbanity and urban transitions. These units of analysis define the scope of investigation - which elements are studied in detail and which processes are to be excluded (Harrison 2002).
Therefore, case study offers discovering complexity of urban development processes and recounts their dynamics by adding the time dimension to the analysis (Feagin et al. 1991). However, the set of well-known components for **designing a case study** triggered its application in this research, such as (Yin 2009):

1. focus on HOW and WHY questions about the researched phenomenon;
2. units of analysis, information relevant for the case construction, depend on the definition of research questions;
3. exploratory nature of research hypotheses, as each proposition is built on something relevant within the scope of the study and for one or more units of analysis;

4. linking findings to the hypotheses, units of analysis and theoretical background, i.e. "pattern matching" Campbell 1975;

5. data collection focus for the case study, while testing methodologies and existing theories provide rich theoretical framework therefor.

Case study is commonly but not exclusively applied in sociology. In general, it is used for grounding observations and concepts about social phenomena in their natural setting. Consequently, it has been increasingly put to use in other disciplines including urban studies and architecture (Feagin et al. 1991). Even though major critics are directed towards single case research focus and doubts about the scientific generalizations based on an individual case, this research builds on Flyvbjerg's elaboration (2006) that careful and strategic choice of cases and thereafter the units of analysis contribute to the collective process of knowledge accumulation. Advocating the case study scientific relevance, Flyvbjerg (2006) distinguishes several selection strategies: random, extreme, multiple, critical and paradigmatic cases. Information oriented selection, based on the expectations about the information content is the most proper for the scope of testing methodologies. For example, extreme case circumstance enable close examination on the embedded units of analysis.

Flyvbjerg (2006) also states that the descriptive manner chosen herein puts forward the path for scientific innovation, which in this thesis is hybridization of methods for urban data anlysis. Henceforth, the most important here is this opportunity for application of multiple methods (Yin) and consequently methodological hybrids, MAS-ANT. Data obtained from the case study aim to contribute to objectives of the research by providing the local layer with real-life data. Accordingly, case study enables testing such methodological approach by systematization and validation of case study data analysed by the involved methods, Actor-network theory and Multi-agent system. In these circumstances, case study is referred to as a sort of data sampling strategy, used to select, manipulate and prepare a representative subset of data points for the analyses by the chosen methods. It delivers patterns, trends and structures in the larger data-set afterwards.

Case study research process is broadly divided in three parts: designing, conduction and reporting. For **conducting case studies**, the most important is to ensure variety but also convergence of data. It is essential to have sampled sufficient points of view to develop a balanced picture (Harrison 2002), but also to provide converging lines of inquiry within the multiple sources of evidence (Yin 2009). Case study usually involves variety of data sources, both human (interviews, workshops) and non-human (documentation, archival records, direct observations and physical artefacts). With this plenitude of data, the phenomena and processes become supported by multiple data sources and ensure constructing validity through triangulation (Denzin 1987b. In this research, triangulation is applied on two levels (Patton qualitative evaluation and research methods):

- data triangulation,

- methodological triangulation.

Therefore, one of the main reasons for choosing case study is structured and bounded data plan and its incorporated units of analysis, cross-referencing methodological procedures and the resulting evidence triangulation with the mixed method (patton 1987, Yin). As of this thesis, case study is the part of larger multi-method study and **reporting** is reduced to the general structuring tactic for the descriptive data about the selected case. However, documenting relationality between the research problem and the case and constructing validity is elaborated within the reasoning for case study selection. This whole research design is linear-analytic in its structure: its starts with the issue of problem and the literature review, then present the logic of research design and chosen methods, findings from data collection and analysis, conclusions and implications. The data collection process through case study method will retain the same linear-analytic manner in its descriptions and implications in a broader scope and take the chronological course according to the causal sequences within case history. In order to maintain the chain of evidence, case study presentation must (Yin):

1. explicate and justify the boundaries of the case;
2. design the research according to the known constraints;
3. indicate exhaustive data collection process;
4. consider alternative perspectives and different points of view;
5. display sufficient evidence

The case study should illustrate, in great depth and clarity, the embedded units of analysis, which are being researched through the MAS-ANT methodological hybrid. Such research design encircle hypotheses testing by logical argumentation for building the methodological framework and simulation of the framework application on the case study. The choice of case study method for data collection is justified by its feasibility for structuring the chain of evidence and confirmability of data by triangulation. On the other hand, reliability of the case study method is determined by its ability to document the methodological procedure with data and its external vality by the transferability of the procedure in other contexts and cases.

Limiting the case study method to the data collection reduces the risks of common deficiencies of the method. Unreliability of soft data is dealt with ANT flatten reality approach, while researcher subjectivity in interpretations and selections is prevented with methodological rigidity in classification and interconnection of data. Finally, in multi-method research there is no need for explanations and internal validation of the case study logic. Moreover, generalizations are reduced to the analytic ones on the methodological level, in terms of categories and networks. In this research, systematization of collected data are used for further analyses and case study is rather a narrative of urban development as an contemporary social process within its real-life context. Therefore, the selected paradigmatic case should be a valid representation of a setting suitable for extensive application of the proposed methodological hybrid within data analysis and data display procedures.

"The case study can enable a researcher to examine the ebb and the flow of social life over time and to display the patterns of everyday life as they change." (Feagin et al. 1991)

3.2.2 Case study selection

As it has been stated multiple times, this research is established on the basis of mixed method and its adequacy for research on complex and dynamic urban phenomena. Verifying such methodological hybrid in practice means that proposed categories and mechanisms within the methodological procedure should be tested by further research activities. These activities include observing real-life context, putting forward the coined phenomena and relations and postulating the correspondence of proposed methodological structures to the reality, which, if exist, answer the research question. In a nutshell, this methodological framework act as an a prior logic to explore particular instances, but it still must account for their various deviations, and aim at few conclusions that contribute to the general, scientific body of knowledge on the urban. The case study point of view herein is deduced from general statements and signifies as a derived, localized, contextualized form of researched phenomenon, in this case urban development process. It gives overview of relations, factors and influences in a holistic manner, providing understanding of a phenomenon (unit of analysis) within its operating context (Harrison 2002).
The case study is used in the first stage of the research process, whereas other methods (Actor-network theory and Multi-agent system) are suited for hypotheses testing and conclusions drawing. However, strategic case study selection is crucial for this research in order to maximize the utility of information from a single case and small samples for the units of analysis (Flyvbjerg 2006). Therefore, the case is selected on the basis of expectations about the correspondence of its data content to the proposed methodological hypotheses. The elaboration of paradigmatic case study for this research is based on Yin's (XXXX) criteria: (1) exhaustive data collection process with sufficient interpretative and artefactual evidence, (2) multiplicity and variety of data sources, especially human, but with (3) explicit case boundaries and (4) precise data constraints.
(1)(2) Case study database is built upon investigator's report (narrative, notes, tabular material, diagrams etc.) and the quality of reporting depend on an extensive evidentiary base. In order to provide exhaustive evidence, case study choice should rely on heterogeneous data sources (Yin):

- exact documentation, archival and qualitative data and records documentation (service records, maps, charts, lists, survey data, personal records);
- physical artifacts (tools, instruments, works of art)- insights into cultural features and technical operations
- interviews targeted focused insightful depend on the construction of questions
- participant-observation - workshops - as direct observations, insights into motives

- direct observation - visiting the site. cover changes in Savamala over time - covers events in real time contextual cover context of events weakness: selectivity, reflexivity

Bearing these in mind, the best circumstances for a comprehensive data collection is knowledge of the local language, previous general knowledge of the context, professional connections and extensive site visits. Even though foreknowlodge can impact the neutrality of the researcher; within this research project, quick and systematic understanding of the local context of urban development process facilitated data collection and improved flat classification, a well-known feature of Actor-network theory.

(3) In his argumentation on case study method in management research, Harrison (2002) argues for its maximal benefits in the circumstances "where the theory base is weak and the environment under study is messy". This also contribute to rejecting general misconception stating that theoretical (context-independent) knowledge is more valuable than concrete, practical knowledge. Moreover, following Flyvbjerg (2006), case study can be extremely useful for transferring tacit (context dependent knowledge) into explicit, general knowledge. Explicating the domain of the practical knowledge - any historical background to the research problem, its time-space transitions and the immediate political, economic and cultural circumstances where it emerges and evolve should be taken into consideration as a chronological sequence. Fine tuning of these various factors and processes present on site and - if properly described - provide an adequate capacity to explain correlational links among identified urban key agents of urban development.

(4) Finally, by placing high priority to abundance and calibration of data, it become less likely that an overall scrutiny of relations, behaviours and processes could be possible in a wider context. Regions, metropolitan areas and cities could be difficult to handle through the embedded units of analysis. Therefore, neighbourhood level of analysis is already fixed by the hybrid method.

Consequently, the case study choice retained neighbourhood level of analysis, but the one that bounds up all recognized indicators of urban development process. On the other hand, the best option is that the researcher is to some extent familiar with the local context and is capable of accessing certain data. My native country of Serbia with its turbulent burgeois and socialist past and transition of today is taken as an exemplary case of intensive congregation of factors, trends and power struggles in one place. The adopted case study field is Savamala neighbourhood in Belgrade, a historical but deteriorating city quarter in Belgrade, where a set of bottom-up urban transformations and participatory spatial interventions are colliding with top-down imposition of master planing and swift, investor-based developments in the area. This multitude of influences with different sources and extensive but limited time-span give an opportunity for a holistic study of complex social networks and processes.

"Case study research is flexible and can be adapted to many areas of knowledge creation. And the researcher is continuously confronted with the question does this make sense?" (Harrison 2002)

3.2.3 Local Context of the Savamala Neighbourhood Case Study

The choice of case study method for data collection is most suitable when the contextual conditions are believed to be highly relevant for the phenomenon being explored (Robson, 1993; Yin, 1994). The hypotheses of this research were examined within the real-life context of Savamala neighbourhood in Belgrade as an exploratory basis for building the methodological framework of analysis for urban development processes.
Selected Savamala neighbourhood case study should should feed MAS-ANT analytical framework with site-specific data on (Harrison 2002):

1. context - global and local, outer and inner in reference of time and space;
2. content - urban key agents and urban decision making layers that put forward urban development processes;
3. income and outcome variable - link the process of transitions to urban elements and networks.

The boundaries of the research are spatial, though Savamala neighbourhood is not an administrative unit nor it has its own local authorities. It is rather a place on the mental map of Belgrade and important landmarks of the city, than an official unit and the exact spatial boundaries are drawn according to the survey conducted among professionals and citizens.
This neighbourhood is a scaled example of pre-socialist material legacy, socialist cultural and societal matric, a transitional reality and a condensed case of its multi-faceted circumstances of post-socialist urban development. These also frame the epistemological constraints of the case study research in this case.
The units of analysis comprise a knowledge-based chain of decision making and a dynamic, interactive process of interdependences and interconnections among all active urban key agents and contextual resources identified in Savamala through the qualitative inquiry exclusively.
To sum up, urban agency and urban networks are not spatially bounded phenomena, they develop as the products of interaction between human and non-human elements in particular localities that contribute to an understanding of the broader urban systems and enhance theoretical frameworks. (Giddens, 1984; Grubovic XXXX)

3.3 Adopted Methodology

This thesis adopted in-depth case study research design with hybrid methodology approach. The reasoning behind the selection of methods applied is elaborated in relation to the objectives, questions and hypotheses of the research (Figure 1).
For this purpose, we perform this research on two stages: methodological and case study level. We relied on qualitative data, collected from extensive literature review, expert interviews and participatory workshops. The application of these data sources depends on

the stage of the research process: case study data collection, ANT and MAS data analysis and MAS-ANT data display. The case study is limited to the collection of qualitative data through the range of techniques: (a) extensive review of written sources, (b) interviews, (c) workshops, and (d) questionnaires. Conversely, data analysis presents the combination of: (1) the level of urbanity as an indicator of urban dynamics; (2) theoretical stances for exhaustive description from ANT; (3) operational categories used in MAS. Finally, data display give an overview of urban transitions through MAS-ANT methodological cross-pollination.

The initial stages of this research started off with qualitative inquiry. Data are collected in human and non-human chunks of analysis. Content analysis of data sources (urban planning policy agendas, urban planning documentation, archival and media sources etc.) provided an insight into the local context of urban planning institutions and land development practice. Interpretative research by direct observations through semi-structured interviews and participatory-action research directed data analysis and further stratified the categories within the mixed-method approach. Online surveys validate the findings based on the working assumption that the soft data give a valuable insight into the complexity and dynamics of urban development circumstances in the local context. This forms the basis for "MAS on ANT" analysis of the obtained data and the final systematization within urban development system of urban transitions.

3.3.1 Savamala Case study - Data collection

The case study research design is adopted as the most comprehensive one, to a certain extent as a research strategy, for an overview of possible categorizations and linkages in terms of complexity and dynamics of urban development processes (Meredith 1989, Harrison 2002). In short, case study research design seeks patterns of the available and myrad data in the bounded space-time of the selected case (Denzin et al. XXXX). A systematic approach for this empirical research is founded on the verification of the hybrid methodology and the data collection process has been recurrent, iterative consultations and interpretations of qualitative data (Figure XXX based on interpretative research explain how it is deviated in my case figure 9.3 and figure 9.4. for the systematic approach for empirical research Harrison 2002 Flynn 1990). Thus, participant observations, interviews, and surveys are all eligible methods which can be deployed in these circumstances. The interpretative itinerary directs how the soft data are collected and built into the artificial reconstruction of the developmental reality through MAS-ANT methodological approach figure xxx. The implementation of the case study (case study protocol) is executed in circles:

1. preliminary identification of the morphology of urban decision making, urban key agents and urban networks at the local level from the scientific literature, official documentation and records, and media coverage;

2. recognition of urban key agent and urban networks structuralization through human perception of the objective reality with participatory action research and semi-structured interviews;

3. verification of urban key agents, socio-spatial patterns and urban transitions through on-line surveys for different professional cliques;

4. triangulating key observations and data sources;

5. examination alternative interpretations and assertions of generalization for urban development (urban transitions) elements and networks through interviews with key-informants (members of different interest, knowledge and action groups).

Initial chain of evidence is presented in the longitudinal distribution of case study data, with time-frame (chronological) and linear-analytic (causal) references. Therefore, the case study report is structured according to the articulation of three layers of the morphology of urban decision making in Savamala: top-down urban planning, real-estate transformations and participatory bottom-up activities. The morphology of urban decision making is the bounding factor for all phenomena, themes, issues built into the case study. This manner of the systematization of collected data corresponds to all case study protocol topics (which are also the research indicators/variables), it also re-orders the protocol procedure differently so that it forms the basis for methodological analysis with Actor-network theory and Multi-agent system. Therefore, case study account seeks to "tame" urban development processes in Savamala by building MAS-ANT patterns into the empirical data within the case study narrative. Thereafter, the outcome variables must be clearly identified and interpreted with MAS-ANT data display.

Qualitative inquiry

"Science is not achieved by distancing oneself from the world; as generations of scientists know, the greatest conceptual and methodological challenges come from engagement with the world" Whyte

Qualitative inquiry is applied as a research instrument which enables scientific processing of soft data - meanings, experiences and descriptions (Yin, 1994). The researcher is faced with the challenge of coping with large amounts of incommensurate data ref. In this thesis, it serves to incorporate the socially constructed knowledge of urban phenomena into the MAS-ANT modelling (Mertens 1998, Flick 2002, Grubovic). In order to ensure replicability of the hybrid method, it is crucial to collect data in a coherent way and condense the complex spectrum of issues into a logical unity familiar not to the researcher only. High research priority herein is to cover the wide panoptikum of humanly moulded data. The proposed reporting scope of the morphology of urban decision making put forward the data structure through: top down management of urban issues, legitimacy of real-estate interests and the dynamism of bottom-up urban agency. To do so, qualitative inquire follow the case study protocol proposed in the previous section ((1) documentary

analysis, (2) preliminary interviews, (3) workshops, (4) surveys, (5) in-dept interviews; while the range of data sources within these separate inquires should coincide with the concept of supporters, opponents and doubters for any recognized data point of importance (Pettigrew XXXX, Harrison 2002).

A common criticism revolves around internal and external validity of qualitative data ref. Within this methodological research, the validity issue is not particularly at stake as the perceptions and interpretations of urban actors (human factor), whatever they may be, influence urban systems and networks in their raw format, the same in which they appear in interviews/discussions/surveys. The major threat has been either researcher bias (directing the interactive data collection processes towards confirming the researcher's preconceived notion) or reflexivity of interviewee's interests rather than statement of their perceptions or opinions. However, triangulation of qualitative data as well as iterative case study conduct should reduce these negative effects.

Iterative nature of the case study protocol also helps in continual evaluation and update of data sources and circular data collection for MAS-ANT data analysis. Evidence and circumstances under which the data are collected are summarized within the following data collection procedures:

(1) Documentary analysis xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

Documentary analysis is rather qualitative research technique for identifying and interpreting documentary evidence in order to support and validate facts and incorporate them in a scientific research. In this thesis. documentary data are used directly for data collection within the initial research phase. By addressing the first research question (*RQ1: "What constitutes an inclusive approach (complexity and dynamics) to urban development?"*), the documentary research method provide an insight into the first round of independent variables. Not only that interviews and surveys may not be appropriate and cost-effective in this phase (Mogalakwe 2006), but also improve the preconditions for interviews by introducing basic issues and concepts, indicating the potential interviewees and setting the path for open-response dialogues (Robson, 1993; GRUBOVIC). Documents are naturally occurring objects, independent and beyond particular scientific production within a research project; through their concrete and semi-permanent existence beyond the produce and the context of its production, they indirectly narrate the circumstance of the social world as well as the actors and circumstances of their production at a specific time and space ((Jary and Jary 1991; Payne and Payne 2004; Mogalakwe 2006).

It must also be recognised that documentary narratives may be inaccurate, fragmented and subjective (Forster, 1994). An early data validation is performed following Scott's (2006) criteria for assessing the documentary sources and data: authencity (genuine, original and reliable material), credibility (fatefull explanations and accuracy), representativeness (reliability for the research), meaning (whether the documents are clear and comprehensible). In this respect, reinforcing the robustness and rigour of this research in the first place is enabled by a preliminary investigation of documentary data sources, which is

followed by examination, categorization and the identification of their limitations accordingly Scoot 2004 Figure XX. Moreover, the documentary data are continually adapted and validated in progress within data analysis through the process of triangulation of data obtained from other qualitative research techniques (interviews, workshops and surveys) (Cochrane, 1998; Yin, 1994).
Generally known documentary sources encompass: public records, the media, newspapers, official gazettes, minutes of meetings, reports and blueprints, visual documentation etc; and they are broadly categorized according to their proprietary rights in: personal, public, and private sources (Payne and Payne, 2004). According to ANT approach, the focus has been put on public and publicly available private sources providing the adequate context for data analysis. In the course of the case study, variety of formal and informal documents and their figuration and impact on the current developmental reality in Savamala (2010-2016) were examined, naming but the few:

- post-socialist urban literature;
- legal documents: laws, by-laws, strategies, official gazettes etc.;
- technical documents: spatial and urban plans and projects;
- internal contracts, reports, projects, meeting minutes etc.;
- media coverage.

As a part of the preparation for interviews, documents were reviewed in order to provide a provisional overview of independent research variables, further developed through ANT and MAS data analysis and MAS-ANT data display. Documentary evidence was also used later on to supplement detail and to expand upon and support or challenge points raised during interviews, and was also utilised to generate additional questions or themes for investigation. In this thesis, documentary evidence have been the data core that set up iterative and continuous nature of the research process.

(2) Preliminary interviews xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
The ethnographic nature of Actor-network theory requires the usage of soft data and the application of qualitative data collection techniques, as diverse as possible. Consequently, the preliminary interviews are held in a rather unstructured manner, characterized by an open-response style. Open-ended interviews are focused on the certain topic, but are usually directed in a rather non-predefined way. Even though the questions can be scripted, the interviewer usually cannot predict what the contents of the response would be. Open-ended interviews may be: informal, semi-restrictive and structured ref.
The preliminary interviews set out the framework for constructing dependent variables of this research in the context of the second (*RQ2: "Why do the level of urbanity traces determine pathways for urban development dynamics (urban transitions)?"*) and third (*RQ3: "How to frame urban development process to embody complexity of urban systems and dynamics of urban transitions?"*) research questions. In this case, these interviews

are targeting local experts in urban research and practice, local and city authorities staff as well as activists operation the ground of Savamala. Several interviews are done in iterations. At times, interviews also take a snowballing course, when the informants were identified by the interviewees from the previous round. The interviews were carried out in circles and the level of dialogue restriction varies from the occasion and interview iteration. The focus is usually on interviewee's thoughts, experiences, knowledge, skills, preferences ideas. All the interviews are undertaken face-to-face.

These interviews are carried out during an extensive period of time, in the overlap with other data collection processes and even during the first stages of data analysis. The timing was also influence by the on-going processes in Savamala as well as the formal and informal channels for establishing the contacts for these interviews. In several cases, the interviews were directed in the least restrictive, informal way, in a form of a dialog, without actual preparation, but instead asking the questions spontaneously in the course of a wider context of the research topic. Subsequently, no two informal interviews are alike. The expert and activists interviews and conducted in a semi-restrictive manner. These interviews follow a general outline of issues of interest, but some questions are generated spontaneously or go to other topics when interviewee's answers prompt for more, connected, information Payne and Payne 2004. The research questions were grouped into X major themes Table XXX. Only few interviews were recorded as these interviews were used for the further identification of major concepts within research variables, and clarity and understanding of interview content was sufficient.

(3) Workshops xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

Topic-oriented workshops are qualitative research techniques moulded for this research in combination of participatory action research (PAR) and simple participant observations. They are applied for re-problematization of research questions in the light of critical reflection and dialogue between and among participating actors ref mcintyre PAR. The aim of this technique is to transfer tacit knowledge concerning the urban development reality in post-socialist context of Belgrade into explicit indicators in order to overcome the single-discipline limitation and lead to rethinking the definitions and conceptualizations of the independent variable and dependent variable and their interconnections within this research project ref whyte PAR ref.

Context-specificity of participatory action research provides multiple opportunities for practitioners and scientists to construct knowledge and integrate theory and practice within a "theory of possibility" ref mcintyre PAR, in this case on urban development prospects of the Serbian capital of Belgrade. Combined with participant observation approach, these workshops are explored and valued how the experience of the selected participants influence their collective realities. In this context, gathered information and constructed explanations from participants are used for testing the systematization of MAS-ANT approach in terms of the morphology of urban decision making, urbanity and urban transitions. For construction an adequate circumstances for such workshops, it is

essential to believe that the participants are capable to create and influence the urban condition ref mcintyre PAR, while the actual data were evaluated afterwards in terms of their confidentiality, trustworthiness, and credibility.

Within the scope of this research, three workshops have been organized: expert, PhD and student workshops. Two of them (expert and student workshop) were on a precise, research oriented topic and one (PhD student workshop) with a broader context in mind. Table XXX gives an overview of the organized workshops and evaluates their role in building a relationship between theory and practice according to the above mentioned criteria. All the workshops were moderated by local experts and the participants (more during PhD and student workshop) were engaged in using urban research methods for constructing knowledge on the topic. Even though the active role of participants is crucial for the success of the workshop, uncertainty of their choice is also very important ref mcintyre PAR. In these terms, participants control the conduct of the workshop, they choose to react, interact or stay passive. Workshop data also test the the credibility of data collected with two previous qualitative research techniques (documentary analysis and preliminary interviews).

(4) On-line Surveys xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

On-line survey is a type of questionnaire. Questionnaires are better suited to collecting factual information Payne and Payne 2004. However, they can be used for provisory verification of subtle and complex data sets, if the questions could be formulated in simple, non-technical and unambiguous, and use the language easily understandable to all participants ref.

The on-line surveys are conducted simultaneously with workshops, but over an extensive period of time (before and after the workshop events). The structure of the online surveys slightly varies and correspond to the workshop; they are adapted to each of workshop audiences: experts, phd students and young professionals, and future professionals (students). As workshop follow the initial documentary analyses and interveiws, surveys are supposed to encircle most of the previously results and test their manifestations in MASANT methodological scope. The survey results are separately evaluated and partially quantified, if possible on several topics. Anything ambiguous, biased or likely to arouse anxiety is tried to be avoided by substituting indirect questions Payne and Payne 2004.

The surveys are prepared with Survey Monkey online service. The survey content is built up as a combination of open-ended and closed questions, categorized according to the prevailing topic. They are structuralized in a linear, complexity-growing manner - from general to more specific questions. The order of questions has an important influence on the answers. At several points, leading questions, where certain answers are expected, are used. At some points, filter questions are used, where respondents are only required to answer certain questions if they have answered a previous question in a particular way. The on-line, internet polling nature of the surveys was specially beneficial for this self-completion parts of the questionnaires, where the question sequence depend on respondent

answer.

An important constraint was the dictate of brevity, especially for the surveys targeting experts. Namely, respondents attention spans are usually short. However, the wording and clear instructions are recognized as vital for the success of the surveys, as well as the possibility for respondents to easily navigate through questions and their meanings as well as to without special effort answer in an simple, clear way. To a certain extent, these constraints reduced the impact of these online surveys on data analysis.

(5) In-dept Interviews xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

In-depth interviews pertain to the final stage of data collection process. They are carried out on specific topics within the research framework in order to provide an in-dept account and validation of research hypotheses. All the interviews are face-to-face encounters, but not all of them are recorded. Recorded or notes-based conduct was left as an option for interviewees to decide. Few recorded interviews are summarized and cross-referenced with the notes taken during the non-recorded ones to ensure clarity of interview content and verification of research data.

The collection of data herein was predominantly by a semi-structured interviews. However, the sequence of addressed topics is more rigid and correspond to that of the research framework and the structuralization of research questions and hypotheses (RH1, RH2, RH3). The question grid is restrictive, and the exact same questions on specific topics are prepared for each interview, even though the slight variations occurred in response to rather open-response style of the dialogues. The careful wording of in advance prepared questions contribute to avoiding ambiguity or specific undesired connotations, but the semi-structured nature of interviews enable the researcher to develop a positive rapport with the interviewee and vice versa ref. Even though semi-structured nature of interviews is more adequate where the range of interviewee accounts and overviews about the research topic are not well known in advance King 1994, in this case they are useful to obtain the factual information on the matter is and to facilitate the data collection from interlocutors from different professional and disciplinary backgrounds.

The choice of interviewees is such that it covers the systematic categories of informants identified with previous collection techniques and correspond to the proposed MAS-ANT categorization. Table X presents the interview grid and qualitative evaluation of the capacity of the herein collected data to be used for MAS-ANT data analysis in terms of their reliability and credibility for this research project.

3.3.2 ANT and MAS approaches - Data analysis

The hybrid field of overlapping MAS and ANT methodological approaches proposes an innovative concept to define causal relationships among urban key elements in order to elaborate the process of urban system evolution (urban dynamics) in terms of maintenance, transformation and change prospects. In addition, some information was gathered from newspapers and magazines. However, although the development of various media made

research on the elite easier, in Serbia the volume of writings on illegal building, especially on the elites activities, was small due to a lack of freedom of speech and fear of journalists and reporters. As a part of the preparation for interviews, documents were reviewed in order to provide a context for the case studies. Documentary evidence was also used later on to supplement detail and to expand upon and support or challenge points raised during interviews, and was also utilised to generate additional questions or themes for investigation, thereby contributing to the iterative and continuous nature of the research process.

ANT Discourse analysis

According to our interpretation, ANT is addressed here neither as a network in technical sense, nor a theory in social sense (Latour 1996), but as a methodological approach which prioritizes relations over their characteristics (Cerulo 2009: 536) and action over mind (Ibid., 543). We will explore these relational and operational elements that mould urban development circumstances in Savamala. We focus on an actual post-socialist urban setting and generation of maintenance, transformation and/or change of the current state of the affairs when global aspects are transformed to meet local specifications and vice versa. In terms of post-socialist cities, copying urban models from the West meets extraordinary difficulties because these cities lack the institutional infrastructure and cultural patterns essential for the functional unity present in western cities (Petrovic 2009). Furthermore, fundamentality and intensity of economic and political change in Balkan post-socialist countries may be a historic exemplary of social transition hard to find in a typical capitalist city (Sykora 1994).

In Savamala, we were confronted with a dynamic reality, a battlefield of different influences, interests and interpretations which determines the future of the urban system itself. In our research project, we turn to qualitative data collection, overlapping case study with interpretative and participatory action research. These methods provide the data for ANT analysis enforced with correlational study, while engineering approach of logical argumentation and schematic interpretation are used for the dissemination of data. Principal data sources are human and non-human based collected through the range of collection methods [(1) extensive review of written sources, (2) interviews, (3) workshops, and (4) questionnaires], provided from the key informants [(A) experts, (B) young professionals, (C) participatory activities, (D) Belgrade Waterfront Project] (Table 2). These key informant categories are identified from the aggregated human and non-human bearers of action and meaning (Latour 2005) among the traces of relevant influences, interests and interpretations in Savamala.

On the level of data analysis, diagnosing urban development circumstances could be determined through a transposition of the current state of this neighbourhood into the elements which could denote the urban flux. These elements, when gotten together into functional networks, form a unique set that indicate factors of maintenance, transformation and/or change of the system, what is in our case a neighbourhood of Savamala. The successful

application of ANT for these purposes involves transposing the terminology of ANT into urban development factors and an exploratory analysis for identifying these factors within a real-life context. In order to apply the identified theoretical principles for the on-site analysis of a dynamic urban reality on the neighbourhood level, we propose to reformulate them in the step-by step methodology, which will be the following: (1) identify human/ non-human entities; (2) flat reality of intermediaries figurations and translations between mediators; (3) traceable associations among those constituted as actors; (4) track stability/instability of agency among actors; (5) simplify and functionalize relations in urban assemblages based on the established roles and nature of links among them (Table 3). As a part of a broader study on post-socialist urban development model, we are examining actor-networks in Savamala rendered from a composition of different layers of decision making that, through coordination and predominance, bring up urban dynamics. The level of analysis is neighbourhood.

Central methodological issues for translating ANT terminology onto an urban environment indicate: 1. All human and non-human actors: From ANT viewpoint, the source of an action accounts equally for humans and non-humans, and only action/relation counts (Latour 1996). Animals, object, texts, symbols, events, even mental concepts may be actors depending on their activities and/or relations (Cerulo 2009). In our case study analysis, we distinguish figuration of all particular human and non-human entities that are subjects of translations on the neighbourhood level of Savamala. Our argument is grounded in the local context of planning procedures and practice concerning Serbian urban system and post-socialist neighbourhood level, as well as bottom-up activities in Savamala. In this manner, we ponder the complexity of our case study neighbourhood to be made up of human - people (urban actors and stakeholders), and non-human entities - urban structures and territories (natural and urban space), institutions and policy agendas, urban and communication infrastructures (Mitchell 1999, Firmino et al., 2008) and social aspects (economic, political and cultural) (Table 3). These operational categories of urban key agents are traced through the extensive content analysis within theoretical scope of urban studies. All case-specific entities are identified within content analysis of various sources on the morphology of decision making in Savamala (post-socialist urban theory, planning legislation and documentation, media sources) and from on-site examinations. 2. Intermediaries and mediators: Following Latours definition (2005), these human and non-human entities become "the means to produce the social" (Ibid.,38) only when their role in the system enact them as intermediaries or mediators (Ibid.). In his words, intermediaries are simple bearers of meaning and mediators actually change actions/relations they are engaged in . Based on the content analysis of research, legislative, operational and media data, we have recognized that certain elements through only through certain figurations in networks take the actor role (Table 3). We distinguish 4 element types (entity, human, artefact, and event). For example, all 4 matter differently whether they are taken individually or in a set/group and for artefacts it is crucial to consider if they are of strategic, technical or repository type. Visually, the shape of the nodes depends

on what figuration of an element makes it an actor. 3. Free associations: One of mayor achievements of ANT is its attempt to redefine sociology as tracing of associations and thereafter designating social not as a quality of an element-entity, but a type of connection between things that are not themselves social (Latour 2005:5). Aforementioned urban key actors (urban actors, spatial forms, regulatory framework, and social aspects), after being denoted as mediators, have an active role in networks, and in ANT terminology it is referred to as the performance of subject (human entities) and the enactment of objects (non-human) (Farias 2011, Callon 1986). As part of ANT data analysis, we juxtapose the recognized entities and convert them into actors. The established actors are those who associate and form networks (Table 3). The reason to reinterpret classical categories of scale, structure and the social in network terms is grounded in qualitative inquire from experts (Table 2). These categories are not taken for granted but applied only when they influence actors relationality. 4. Stabilizing and destabilizing agencies: When applying ANT for urban analysis, the importance lies in avoiding pre-established social science categories (Farias 2011). It is essential to refer to agency as a relation that connects multiple actors, and distributes causality and explanations across networks in stabilizing or destabilizing manner (Ibid.). Based on expert insights and data from PhD workshop and documentation on local, regional and national level, we examine complexity and interactions among the actors on the neighbourhood level, how they cooperate/coordinate/negotiate/collide and organize into networks according to their roles (Table 3). In graphical terms, node colours correspond to the agency of actors and active, but standardized networks they are engaged in. The difference between association and agency in our interpretation lays in their dynamics these networks, though standardized have the bipolar potential ability to influence actor-networking. 5. Urban assemblages: Urban assemblage is a trendy term for aggregating, not identity altering, relations of heterogeneous urban actors (Muniesa et al. 2007), relations of exteriority based on actor-networks (Faras 2011:15). According to ANT social and structural descriptions of urban dynamics, data validated in workshops with researchers, professionals, activists, young professionals and citizens are channelled visually through actor-network diagram. Body of actor-networks are comprehended without any preconceptions of society, social realm, social context and/or social ties and visualized by the size of nodes (actors) and the colour of links between them (networks) (Table 3). The size of the node equals the centrality of an actor and its influence. Actors influence is assigned approximately according to its presence in time, number of its relations, and types of the relations. Conversely, colour of the links relate to the nature of links in which these actors engage and produce specific social effects.

This 5-step ANT framework aims to illustrate urban development of a post-socialist neighbourhood in Belgrade Savamala. For logical argumentation on network formation and development, we accept as basic rules the major ANT assumptions: (1) everything that matters is an actor and therefore engaged in a network(s); (2) there is no context or any non-associated element in the system. In this respect, we visualize Savamala urban development circumstances (all context-related, history-related, on-site and documentation-

related data) in terms of actors (human and non-human) and the nature of links they are engaged in relative to their activities, priorities and relationships.

Structural analysis

According to MAS, system dynamics relates to individual elements and their communication, free will, belief, competition, consensus and discord etc. This all must be taken into account, as it actually is in its application for computer programming. The system of analysis therefore consists of: E - environment: static, defined by the level of analysis - post-socialist neighbourhood; A - assembly of agencies: static state of urban key agents; O - set of objects: passive contextual elements spatial capacities and social potentials; R - assembly of relations: active elements social practices and urban conflicts; Op - assembly of operations: active morphology of urban decision making; U - reaction of the context: static, research goal urban development in terms of maintenance, transformation and change of the system.

In more technical terms, MAS-ANT cross-pollination happens on the level of agent profiles:

AGENT PROFILE = AGENT STRUCTURE + AGENT PREFERENCES + AGENT BEHAVIOUR

We readdress actors as agents and come up with agent profiles configured from the combination of agent structure, agent preferences and agent behaviour. Each agent profile element refers back to both ANT and MAS categories: AGENT STRUCTURE addresses ANT categories of (a) the nature of actors; (b) structure and networks of influence; (c) secondary and socially functional networks; and the sum of interpretations translate actors to agents and constitute an assembly of agencies A from MAS. AGENT PREFERENCES regard from ANT (d) social artefacts (political, economic and cultural) which they are involved in the operationalization of objects O (contextual resources) and relations Op (social practices and urban conflicts) from MAS. AGENT BEHAVIOUR are ANT (e) networks of translations and MAS explanation of HOW (pro-activity, sensitivity, interaction) these agents reference back to the system development U (maintenance, transformation and change).

Sorting all the data about an agent in these categories provide us with full description of how urban system works. ANT analysis furnishes exhaustive categorization of elements and networks - the detailed image of agent structure and the field of their influence (networks). Agent preferences are represented through object and relation categories from MAS and correspond to the level of urbanity theoretical stances . In practice, it signifies that all urban conflicts and social practices could be identified as directed relations (R). Conversely, spatial capacities and social potentials are referred to a set of objects (O) to be activated. The agent behaviour are the products of multi-criteria MAS analysis (Arsanjani et al. 2013). In practice, urban dynamics is defined as how the agents A behave to perceive, produce, consume, transform and manipulate objects O and engage in relations R in order to enable maintenance, transformation or change of the system.

An urban development model is based on:

Measuring the efficiency of urban planning

Testing the legitimacy of urban transformation interests

Recognizing the opportunities of bottom-up urban design initiatives

3.3.3 System Building - Data display

Reporting the findings is done in a visual manner, where all the data are categorized and built in the visualized system of urban transitions. In this manner, data visualization techniques are used for data reduction and operational display of data.

Setting a procedure

The research is executed in hierarchical order. ANT serves for the identification of all actors (human/non-human, material/non-material) and flattens the social into a panoptic internalized ontology. MAS traces the character of their appearance in networks and their internal relations and connections. In this way, actors (ANT) are transferred into agents (MAS). Finally, theoretical layer represents a generative body of concepts suitable for tracing urban dynamics. Such triangulation is carried out in three steps (Figure 1):

1. Interpreting agent structure: Identify all context-related, history-related, on-site, literature-related and empirical data according to ANT principles - that everything that matters is an actor and therefore engaged in a network(s) and that there is no context or any non-associated element in the system (ANT article). 2. Qualifying social practices, urban conflicts and contextual resources Transfer topology of ANT into topography of MAS: Monitor spatial and social data categories in order to add agent preferences to the profiles. 3. Evaluate development-based scenarios (maintenance, transformation, change) Referring back to ANT assemblage networks and MAS analysis of agent behaviours in networks

The data collection and data analysis processes are carried out iteratively from: (1) collecting context-based information and knowledge (2) ANT classification of the data on the local context; (3) MAS analysis of agents behaviours (ANT article). The key informant categories are identified after the traces of relevant influences, interests and interpretations in Savamala. The descriptive nature of ANT premises enables data structuring in terms of set of human and non-human agents and urban assemblages on the neighbourhood level. Henceforth, the behaviours of agents are identified by qualitative surveys. From the above presented approach, tracing urban dynamics comprises structuring an urban environment according to clear categories as well as simulating autonomous actions and interactions in order to study blurred processes of constant system evolution. The set of networks involve the heterogeneous distribution of urban key elements acting at sites (human and non-human) and causes and consequences of actions and forces. All these urban key elements are assumed to be equal agents in the reproduction of social practices, operating contextual resources and dealing with urban conflicts.. These continuous processes of

maintenance, transformation and change reflect agent behaviours and contribute to the system dynamics.

Chapter 4

Case study

As it has been already urban development is a worldwide, broad, general and mutable process, it still contains a necessary connection to place - making an actual urban setting a vital factor for case specific uncertainties and a polygon for transformation of global aspects to meet local specifications. Our aim is to move away from the general theoretical research into an on-site practice-based investigation. Consequently, this research project attempts to show how the real-life focus on Savamala neighbourhood in Belgrade eventually increases the body of knowledge on post-socialist urban environment and the methods used to deal with complex and dynamic urban context.
Savamala is a typical East-European neighbourhood caught in post-socialist processes of economic and political change in Balkan transitional countries. In these circumstances, such cityscapes cannot resist copying urban models from the West, but meet extraordinary difficulties in doing so (Petrovic 2009). Serbian society as a whole experience the period of radical shifts from: totalitarian to democratic political system, planned to market-based economy, public to private property ownership, supply to demand driven economy, industrial to service based society, and isolated to integrated position in the world economy (Petrovic 2009). Therefore, Savamala, with its even more intensive top-down and bottom-up pressures, is a representative testing environment.

The former Yugoslavia from the 1960s comprised both capitalist and socialist elements concerning decentralized political structure, cultural exchange with the West and quasi-capitalist reforms (Hirt 2009), but suffered from deep economic crisis, the decline of legislative power, international isolation and war during the 1990s. In this context, a post-socialist urban environment in Belgrade could be exploited as a laboratory for changes that has emerged in reaction to the extreme economic, political and cultural condition-changes (Nedovi-Budi 2001). The purpose of the case study used in this research is to build an urban development model that accurately describes and illustrates such a context and to use it for broader interpretations and demystification of modern global cities.

4.1 Belgrade - a City in Constant Transition

The purpose of the case study used in this research is to build a social phenomenon to represent a modern urban environment in the economy of a transitional country and to accurately describe and illustrate it in order to establish a context for a new methodological approach (Yin, 2009). In post-socialist cities, urban planning should link the top-down changes (linked to national and global level) to the bottom-up changes in the urban systems of the city, by emphasizing diversity and reciprocity in the nature of the on-going transformations: economic transformations (transformation of production and consumption in relation to space, income polarization and poverty), political transformations (urban governance, participation and decentralization), spatial transformations (demographic trend and distribution of functions) and social transformations (social inclusion, social activism and informality) While some trends and directions within these transformations are clear and defined, uncertainty dominates decision-making and implementation in the turbulent environment of post-socialist cities (Nedovi-Budi, 2001). The internal environment is in a state of flux, with the rapid adjustment of the physical, economic, social, and political structures of the city itself (Sykola, 1999). This captures the pace of change and the multi-layered nature of transformation, with the focus on the process of change in the citys economy, society, system of governance and the spaces of production and consumption. Any historical background to this research problem, its transformation over time and the immediate surroundings where it emerges and changes, should be considered as a chronological sequence. This, if described properly, will provide a suitable means for explaining causal links among the identified factors and elements of urban development. Given the implications of positive theory, it will be possible to predict the future relationships and behaviour of the elements in question.

The urban transformation of Serbian cities falls into the clich of the new post-socialist urban reality, which emerged during the transition to market-driven economy and democracy (Tsenkova, 2006). The dismantling of the communist system during the late 1980s represented a substantial change in all aspects of the economic model, the political system and social organization. Accordingly, although the case of Belgrade presented a high degree of urban planning strategies and its practical implementation during the previous socialist regime, urban planning was continuously hindered by political instability, convergent socio-economic forces and inconsistent planning systems during the transitional period of the 1990s and the early 21st century. However, Serbia still finds itself in a post-socialist proto-democracy without the developed institutions of a representative democracy, civil society and market economy (Vujosevic et al. 2010): Urban planning has not been a priority (Sykola, 1999) and planning documentation has already been turned into symbolic documents (Nedovi-Budi 2001) Urban transformations mainly concerned land use and property ownership changes overwhelmed with powerful economic actors who take advantage of the undefined environment in order to protect and promote their activity and extend their property ownership The topology of powerless urban actors (ordinary citizens and the civic sector) who have almost no prospects for meaningful social partic-

ipation and who are not defending their rights therein (Vujovi et al. 2007) Fragmented spatial development dominated by informality and confused eclecticism that shows the characteristics of urban design bricolage rather than the purposeful stratification of socialist and post-socialist layers upon the urban fabric (Hirt 2008). These circumstances imply that decision making in urban terms is performed through negotiations between investors and local governments, where local authorities and civic sector, even though they possess legal empowerment, lack adequate and operational instruments for exerting their power and acting as equals in the negotiation process (Bajec 2009). In addition, public interest in local authority services is a result of the direct influence of political programs of those who are involved in local authorities and are active protagonists at global and national political scene at the same time (Djokic et al. 2007). The pervasiveness of such uncontrolled and even illegal development leads to the deconstruction of urbanity (Vujovi et al. 2007). In such environment, even though the western planning paradigm involves corrective factors for urban failures inherited from the free market (Nedovi-Budi 2001), the path dependency tradition of urban development in Belgrade traces a different urban planning framework that was not considered sufficient and effective for managing local urban issues. Complex institutional legacies influence the behaviour of all urban actors, prevent the development of flexible social patterns and networks and fall short of providing overall legitimacy for the constellation of different interests in the post-socialist context of Belgrade (Petrovic 2009). Furthermore, very few theoretical or general methodological research studies bothered to examine alternative modes for urban development in transition, apart from replications of the approaches taken by neo-liberal or institutional economies (Tsenkova 2007).

4.1.1 Savamala

Savamala is a neighbourhood in Belgrade situated on the southern bank of the Sava River in the old part of Belgrade (Figure 2). The neighbourhood of Savamala is rather a place on the mental map of Belgrade and important landmarks of the city, than an official administrative unit (Figure 1). Its name means Sava neighbourhood, and it is derived from the Turkish word for neighbourhood mahala, combined with the name of the river whose bank it is situated on. The first official mentioning of Savamala was around 200 years ago after the resolution of city authorities to spread the urban structures to the river in order to set forward its urban development. During all these years Savamala has been a venue with a plausible collision (traditional/modern; past/present) rich in tradition, history and heritage. Its physical layout can be described as: (1) an appealing location in almost a geometrical centre of the physical layout of the present city of Belgrade, (2) an attractive but deteriorating neighbourhood with irrevocable potential for renovations and refurbishments, (3) an area within the walking distance from the city centre but still aloof from its ever-growing hustle and bustle. In a nutshell, this neighbourhood is a scaled example of pre-socialist material legacy, socialist cultural and societal matric, a transitional reality and a condensed case of its multi-faceted circumstances of post-

socialist urban development (Table 4): Pre-socialist past marks its presence in Savamala through architectural and cultural heritage (Figure 3). Cultural and behavioural patterns from Yugoslavian socialist regime . Post socialist backtracking Transition prospects : From recently established economic constellation, Savamala has a potential to become an attractive urban area for investments.

4.2 Stimulants and deterrents of decision-making tradition in Belgrade

the post-socialist period in these cities contains prevailing characteristics of the disintegration of the preceding system rather than a coherent vision of what should follow (Stanilov 2007). However, the ideal changes should have considered radical shifts from (Petrovic 2009): Totalitarian to democratic political system Planned to market-based economy Public to private property ownership Supply to demand driven economy Industrial to service based society Isolated to integrated position in the world economy. These factors provoked a legal void susceptible to shady deals and questionable public-private partnership (illegality), a lack of strategically proactive urban governance which resulted in tolerance to illegal building practices (informality), and the increasing social polarization (inequity) and poverty in this region the number of poor people had reached 100 million in CEE by 2001 (Tsenkova 2006a). Such circumstances have had a profound influence on the spatial adaptation and repositioning of post-socialist cities in terms of (Stanilov 2007): 1. Urban management (illegality loosens official strategic action planning and implementation) 2. Urban patterns (informality reduces the spatial scale and spatial formalism of urban structures) 3. Urban impact, urban social practices (inequity leads to social and spatial stratification of urban structures). This rather organic path of urban development led to the classifying of post-socialist cities in transitional countries as unregulated capitalist cities (investment-led) with third world urban development elements (substantial illegal activities and informal markets) (Petrovic 2009).

4.2.1 Top-down management of urban issues

From the end of the Second World War up to the 1960s, urban planning in the former Yugoslavia almost exclusively reflected the top-down tradition of the communist institutional and ideological framework (Dawson, 1987; Papi, 1988). Surprisingly, in the 1960s the political and administrative system was decentralized politically and liberalized economically, and for a time Yugoslavia was known for having one of the most decentralized decision-making systems, which applied equally to social, economic, environmental, and spatial (urban) planning and policy (Simmie, 1989; Miodrag Vujoevi, 2003). This bottom up participatory approach based on the cross-acceptance principle was introduced, at least nominally, more than a decade before it was contemplated or practiced in certain developed Western countries (Cullingworth, 1997). By the end of the 1980s, both the Yugoslav urban system and planning practice had become dysfunctional despite their

innovative features, because of the hypertrophied and bureaucratized social and political system (Oi, 1998). In the light of these circumstances, and in order to make the planning and policy process more effective and efficient, Serbia is searching for a new planning and policy model that not only meet the general principles of a pro-active, transparent, adaptive, inclusive, evaluation-and-feedback-based planning procedure, but also one that can be supportive and compatible with the development of its civil society, based on the authority of law and traditional social rules and in harmony with the rules of the European Union. Bearing this in mind, the case of Serbia is a good illustration of how a planning system can adapt to changing political and socio-economic circumstances, because the extreme variations in the planning practice and the response to the societal circumstances since the late 1980s offer rich opportunities to observe the relationships between planning and its broader social and spatial context (Thomas, 1998).

Having the process of urban development broken down into three strategic approaches for addressing urban conflicts, we can state that urban planning procedures aspire to generate an action plan for development that achieves common viewpoints, goals and priorities within an ordinary city, as well as a set of strategies optimised over time within the institutional mechanisms for their implementation, monitoring and evaluation (Fisher, 2001). Therefore, urban planning theory has always complied with the prevailing theoretical framework of social studies (Portugali 2011). On the contrary, in order for planning activities to be effective, they should be embedded in a particular social context, and they react to the shifts in socio-economic and political settings. Having the operational framework of urban planning defined as such, it becomes conspicuous how its practice has always complied with an overall planning paradigm, being simultaneously intrinsically connected to the property market and tending to maintain current social order (Taylor 2006). Scientific research in the field operated within this framework and during the same period comprised, first, a normative planning model based on a top-down decision making process, and then, collaborative and communicative planning when the diversity of values, meanings, and interests have emerged more vigorously so that the role of the urban planner changed from being a technical expert to a mere facilitator (Taylor 2006). Accordingly, general urban planning in former Yugoslavia incorporated the process of paradigm change in Kuhns sense of meaning and set a specific pace of progress dependent on the current state of socio-economic and political affairs at national and city level (Bajic-Brkovic 2002). The discrepancy between theory and practice initiated the abandon of the previous planning model with one fixed future vision of urban environment in the 1980s, but real dissolution of the planning paradigm started in the 1990s due to the disintegration of Yugoslavias socialist system and the destabilization of the institutions which brought about the lack of legitimacy in urban planning in post-socialist cities of the newly established state (Vujosevic 2010). The major characteristics of a post-socialist chaotic pattern of urban development are: a multitude of actors, various economic, social and political interests, social aspects and fragmented spatial development. In other words, what proceeded after the end of the socialist era is a neoliberal model of urban planning

with the supremacy of market-oriented solutions for urban problems (Sager 2011). Thus, the crucial failures of post-socialist urban planning have come about through the lack of consensus on priority goals, action-oriented programs of implementation and coordination of different levels, sectors and areas. In practice these conditions ended by having the strategic plan as an advisory long-term urban vision, but leaving the real actions and decision making to political and market forces. Thenceforth, urban development of post-socialist cities most often has exceeded and diluted the common strategic framework defined from top-down: to establish clear links between the process of strategy development, its institutional framework, the hierarchical structure of long-term and short-term objectives of all actors involved, and the real-time changes happening simultaneously in an urban environment.

4.2.2 Legitimacy of Interests in a Post-socialist City

Tactical Urban Transformations

As we have mentioned urban development relies on much more than strategic urban planning, in spite of the propensity of the scientific community to control and govern it to the greatest extent possible. Every urban issue relies directly on the economy and the mode of production and consumption in modern global cities. Namely, the capitalist economy needs urbanization to absorb the surplus products, so that the deregulation of land use and property markets is the precondition for capitalist accumulation and thereafter proceeding to economic growth (Harvey 2012). Following Harveys line of thought, the power extracted from the exclusive control over property or land is the source of capital produced by its locational, infrastructural, social or cultural capacity. In other words, the contextual resources of an urban environment in a developing country make it appealing for incoherent distribution of resources and responsibilities (Bolay et al. 2005). Furthermore, within a range of different urban actors, influential economic and political actors tend to abuse their powers and appropriate urban space, when the regulatory framework is blurred and biased as it is in post-socialist cities (Djokic et al. 2007). Therefore, urban governance in post-socialist cities is more reactive to the interests of capital investments, as well as being tolerant of illegal practices than it is strategically proactive, which leads to organic rather than comprehensive entrepreneurial city development (Petrovic 2009), a laisser-faire economy and a global consumer culture which dissolves the democratic capacity of countries in transition (Ellin 1999). The main characteristics of urban transformations in post-socialist cities are marked by: investor urbanism stemming from loose regulatory framework and vulgar economy patterns (Vujosevic 2010) pluralist political life and political voluntarism which dominates the implementation of laws (Djokic et al. 2007) citizen resignation and political passivity holding back the expansion of participation (Vujovic et al. 2007). These circumstances lead to the multitude of interests, initiatives and small-scale projects with no effective and binding policies and institutionalized regulatory means for synchronization and coordination among them. Moreover, within such blurred framework urban actors with no political or economic power become marginalized and de-

prived of their rights to be actively involved in designing their urban environment (Bolay et al. 2005).

4.3 Dynamism of bottom-up urban agency in Savamala

Following Arnsteins ladder of participation idea, each society is left to mix and match the participatory processes that meet its needs and influence power relations (Fisher 2001). Accordingly, participatory planning aims at achieving certain end-results, contributing to the efficiency of society as a whole in a process for accumulating social capital, and creating institutionalizing networks of civic engagement (Putnam et al. 1993). It means that every society may be able to produce its own space with a strong impact of its ideology and cultural spheres, and thereby controls its urban development (Lefebvre 1974). The identity of an ordinary city constantly in flux is then defined as the process of self-understanding, self-creation and self-representation of an operating urban environment by its urban actors, all of whom are mobilized to intervene responsibly and who willingly integrate their customs and needs into this process (Bolay 2004). Participatory planning is a process that is usually designed to address urban conflicts with the aim of resolving or exploiting it successfully (Fisher 2001). Namely, from the introduction of communicative planning approach in 1980s onward, public participation has been introduced as a tool for exploiting democratic capacities of modern society in order to locally mobilise all available human resources to transform a crisis of aggregated urban conflicts into an opportunity for urban development (Healey 1996). Efficient public participation measures, calculates and includes local complexity in tracing urban development according to local, social and up-to-date characteristics (UN Habitat 2009). What is more, successful participation firmly relies on the accessibility, transparency, responsiveness, and accountability of all institutional processes. This citizen power places these individuals or constituted groups into political and economic processes, and it deliberately includes them in decision making for the future of their society. However, practical application has shown that public participation in Arnsteins terms lacks popular sovereignty in order to place all urban actors and stakeholders equally within the decision making process, and has been particularly aggravated by thriving neo-liberal market policies (Mouffe 2002). The influence of this trotting up and down the ladder of participation is especially accentuated in ex-authoritarian states. In this sense, the trends of commercialization and free market policies in transitional countries led to the decline of public realm, the deconstruction of urbanity and the abuse of public space (Hirt 2008), which urge a different approach to bring forth an adequate societal realm, induce livelihood and mould the positive urban future. The alternative vision was recently set in practice with the paradigm of tactical urbanism whose main goal is to set forth economic, political, cultural and spatial transformation in global cities by instigating creative interventions that guide their change, giving them unique identities (Lydon 2012). The conceptual core of such an approach circumvents involvement of the least powerful urban actors in decision making, encourages

them to creatively trace their cultural identity through adequate professional supervision and bring positive changes, develop social capital and organisational capacity that involves shaping a physical and a social component of cities (Bolay 1996). In regard to participatory urban design, it therefore becomes important to have a critical society; a populace which is being trained to know, show and actively express their needs and directly apply them in urbanism (Ostrom 1995). Moreover, their needs must also be modified to what urbanism can actually offer; they need to act or interact with the world around them, which is in flux (Harvey 2003). This way of bottom-up, step-by-step urban development for surpassing current profit orientated neo-liberal trends and benefitting from spatio-social contradictions could be especially effective in cities that are going through traumatic post-socialist transition. Bearing in mind that such activities have already been operating in practice in Savamala neighbourhood in Belgrade (Urban Incubator Belgrade 2013), it is essential to incorporate its transformative capacity of building local knowledge on current urban conflicts and contextual resources, congregating ideas and setting a comprehensive overlay of urban scenarios for interventions within an exhaustive model of urban development.

Moreover, the way cities function shapes the expectations and actions of all the urban actors involved, who also influence the constitution of the city itself.

The identity of a city in flux is defined as the process of self-understanding, self-creation and self-representation of an operating urban environment by its urban actors, all of whom are mobilized to intervene responsibly and who willingly integrate their customs and needs into this process (Bolay Jean-Claude 2004). On the other hand, these individuals or constituted groups are the actual makers of the city. They determine space as a social product of their values, the logic that pilots them, the relationships and representations that influence them and the aspirations that motivate them (Lefebvre, 1974). Public participation in terms of the bottom-up, action-orientated and socially inclusive engagement of all individuals or constituted groups measures, calculates and includes local complexity in tracing urban development according to local, social and up-to-date characteristics and in marking potential clashing spatio-social points (UN Habitat, 2009). What is more, successful participation firmly relies on the accessibility, transparency, responsiveness, and accountability of all institutional processes. This citizen power places these individuals or constituted groups into political and economic processes, and it deliberately includes them in the future of their society (Arnstein 1969; Fisher 2001). Following Arnsteins ladder of participation idea, which denotes the feasibility of subtle nuances of participation, information exchange and decision-making distribution between different social actors, each society is left to mix and match the participatory processes that meet its needs and influence power relations (Fisher 2001; Arnstein 1969). The influence of this trotting up and down the ladder of participation is especially accentuated in ex-authoritarian states. Accordingly, participatory planning aims at achieving certain end-results, contributing to the efficiency of society as a whole in a process for accumulating social capital, and creating and institutionalizing networks of civic engagement (Putnam, Leonardi, and Nanetti 1993). It means that every society (with an emphasis on its human capacity) may be

able to produce its own space with a strong impact of its ideology and cultural spheres, and thereby controls its urban development (Lefebvre, 1974). Participatory planning is a process that is usually designed to address urban conflicts with the aim of resolving or exploiting it successfully (Fisher 2001). It is therefore important to have a critical society; the populace must be trained to know, show and actively express their needs to directly apply them in urbanism, and their needs must also be modified to what urbanism can actually offer and they need to act or interact with the world around them, which is in constant change (Harvey, 2003). They must be made to understand their multidimensional environment and how they live in it; they must believe that they are not points on a Euclidian plain, but rather that they are in constant movement relative to everything around them. Such practices emphasize the equality between the role of all urban actors, stakeholders, authorities and professionals in this process.

4.3.1 Network of civic engagement

Participatory Urban Design Operations

Chapter 5

ANT Data Analysis

Bearing in mind that actor-network explanations give real results only in strongly defined situations (Faras and Bender 2011), we apply flattening composition of all heterogeneous human/non-human actors (ANT) in Savamala, identified from qualitative data collected on 5 different levels (Table 3), to visually describe urban reality of a post-socialist neighbourhood.

5.1 A forward-thinking overview of building an urban development model for Savamala

Following the circumstances found through in-depth case study research design, actor-network map is illustrated in node-link form and the visualization of the empirical and theoretical data on actors and networks is structured in the following way: 1. All human and non-human actors case study description: In ANT terms, Savamala neighbourhood is represented as a venue (territory/space natural or urban) with material constitutional elements (built environment urban structures), wherein a variety of urban actors and stakeholders (individuals and groups) interrelated to these social factors and within a specific regulatory framework (policy agendas and institutional relations) engage in actions. Since we have argued that the rapid flow of people and information in the modern globalised world has profoundly transformed the perception of space and time, lifestyles and our sense of community and self (Ellin 1999), we must then state that the vital cohesive force of the modern city incorporates also technical solutions (urban infrastructures) and technologies (communication and media). A multitude of these human and non-human actors shape top-down, interest-based and bottom-up developmental action and influence multi-layered decision making structure in terms of decisions for maintenance, transformation and/or change of the system. Top-down urban planning actors institutions and policy agendas Institutional organization of urban regulatory framework in Serbia corresponds to the administrative organization of the Republic . The Ministry of Construction, Urbanism and Infrastructure is the key public actor at national level in the domain which: (1) conducts administration tasks, (2) govern strategic construction, site-development and infrastructure equipment works, (3) carry out survey jobs, and (4)

perform inspection and supervision actions in the field (Maksic 2012). Conversely, cities and municipalities have legal means and rights to make their own strategies, plans, and programs, as well as local regulations and rules in terms of urban development . National and city authorities, planning bodies and policy agendas are subjected to continuous pressure to solve an old issue of Belgrades peak waterfront area. These initiatives date back to 1920s . The exact area of intervention in these planning phases varies from Gazela Bridge to the far end after Dorcol marina, but their common denominator is the relocation of bus and railway station. Interest-based transformations - influential business stakeholders and corporate bodies Powerful investors use its economic and political dominance to gain a good bargain for buying highly profitable waterfront area of the Serbia capital and to ensure that its future development serve their needs. The most important ones hitherto active in the extended area of Savamala; o Lamda Development investment for Beko factory renovation ; o City on water project by Luka Belgrade ; o Eagle Hills and Belgrade Waterfront Project (BWP) . Bottom-up participatory and urban design activities Artists and cultural workers, National and international cultural institutions and NGOs (Figure 4) Having identified the transitional capital of Savamala in the local context, from 2008 onward a number of small-scale public initiatives and creative services have found their place in Savamala (Cvetinovic et al. 2013) . In absence of an overall urban development strategy, independent cultural entrepreneurs , supported by the municipality Savski Venac, have started the transformation of unused warehouses and craft shops into spaces open for public participation and social production . These associations and private initiatives have finally introduced the opportunity for an alternative strategic path to influence urban development of the neighbourhood (Mikser Festival 2012) and made it famous on a global scale as one of creative clusters in European metropolis. Agency and relationships of the above identified human/non-human actors in Savamala are tracked by their associations within different levels of decision making (top-down urban planning, interest-based transformations and bottom-up participatory and urban design activities) in a visual manner. 2. Intermediaries and mediators (Figure 5) Starting with ANT, its open approach to comprise whatever may be an element of a complex urban system and its loose definition of actors relationality, we faced rather straight-forward indicators of actors influence on site and have realized that their human/material nature should be acknowledged as it unmistakably designates their roles in processes of urban development. Therefore, we have shrunk this wide conceptual field to the category of actor nature, which tells us if human/non-human element serves as intermediary or mediator. In this respect, we differentiate its human, entity, artefact, and event figuration, and we indicate if it is an individual or group element. So to speak, the nature of an element defines if it bears or changes meaning in one manifestation they do, in the other not (Figure 5). 3. Free associations (Figure 6) From our qualitative data (expert questionnaire, workshop, interviews and documentation), we have realized that classical urban categories (social, structure and scale) cannot be fully undermined, though they are used not as explanations, but as associations of performativity and enactment (network of influence, social

function categories and social artefacts) (Figure 6). Thus pertaining artefacts are converted into actors. In other words, these association-based actors actually operationalize urban concepts and categorize actual forces and actions. 4. Stabilizing and destabilizing agencies (Figure 7) While tracing interactions and interconnections among actors collected through participatory action research methods (Table 3), we have revealed that various social manifestations of these actors work (de)stabilizing. We spot the actors according to their social function/action, elaborating that these agencies and bring an additional layer of urban reality explanations (Figure 7). In fact, the differentiation of functional and supportive networks indicate possibility that the actors change their roles by alter their network engagement. The notion of supportive/secondary networks is laid out more as a significant subset of actors already figuring in any of socially functional networks explicating their bipolar character . 5. Urban assemblages (Figure 8) After having illustrated Savamala urban environment through actors, their figuration and agency, we interpret complexity and dynamics of its urban development through node-link reality. Taking into account post-socialist context, significant pressure from private investors and articulation of civic initiatives and participation in Savamala, we have identified the network of translations which refer to different layers of decision making. These translations consider centrality of actors and nature of links among them and represent in this sense an assemblage process of agency dissemination. These overarching urban assemblage networks of management, verification, consulting, administration, planning, construction, regulation, control, finances, implementation and social aspect networks (Figure 4) encompass significant number of humans, nonhuman, action, agencies or forces that have a figuration in Savamala, allowing us to outline and trace among them the distribution of any political, economic and cultural repercussions on its urban development (Table 5 and 6). At the final stage, we translate what we have perceived through 5-step ANT framework of Savamala urban development analysis data sources onto visual ANT relational map (Figure 9).

5.2 Urban assemblage map: urban key agents and contextual resources

Chapter 6

MAS System Building

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6.1 Profiling the agents

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Chapter 7

MAS-ANT data display

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7.1 Body of urban relations: Urban Development dynamics

Data display

7.2 MAS-ANT diagram: scope and operationality

Discussion

In Savamala, we have identified a dynamic, interactive actor-networks articulated through decision making mechanisms of top down planning, interest-based real estate transformation and co-design and creative participation actions. In our case, global and local social factors (economic, political and cultural), placed in the particular spatially and socially constrained context (Serbia, Belgrade, Savamala), are the main forces of urban development and they constitute social artefacts (actors) and social aspect networks (urban assemblages) (Table 3). The detailed mapping and visualization of these actor-networks also accounts for contextual, post-socialist and transitional circumstances, avoiding explanations coming from the reproduction of social order, power and class. In other words, the collision of these grand narratives is present in the current Serbian context through: (1) crisis of common social values and civic society standards, (2) lack of healthy investment interest and fair competition, (3) absence of public interest and public good concerns, (4) a battlefield of significant power pressure and interference of interests from authorities, business actors and civil actions. Based on the performed ANT analysis, on Savamala urban development prospects we may specify the following: (1) lack of elaborated, strategic policies in urban development and investment; (2) cumbersome institutional structure; (3) distribution of publicly owned empty plots and spaces in Savamala to private investors/owners; (4) vertical clientelism in institutional framework (Vujovic and Petrovi 2007); (5) up-to-date legal documents and policy agendas which do not correspond to urban reality; (6) overpowered and personalized Nation State as a key actor on citywide scale (BWP example); (7) semi-legal institutionalizations become official practice and a

pool of opportunities for future exploitations; (8) provision of instruments for powerful actors to realize their interests through controversial institutionalizations; (9) unregulated economic incentives and measures; (10) economic aspects strongly influence political aspects and actors in post-socialist context; (11) institutionalization of private interests of powerful economic actors and marginalization of civic initiatives and public interest; (12) growth without development (Vujoevi and Maricic 2012) roots in top-down approach to regulatory, managerial and financial networks; (13) privileged foreign and domestic developers in Waterfront/Sava amphitheatre/Marina Dorcol Redevelpment (Djordjevic and Dabovic 2009, Stojkov 2015); (14) political actors in Serbia have support for the replication of Thatcher-Regan model (Vujosevic 2015); (15) housing and commercial purpose of 80 percent of BW spaces (Zekovic et al. 2016); (16) spatial fragmentation and unequal distribution of resources in Savamala: Waterfront and Upper (Urban) Savamala; (17) no adequate educational framework; (18) lack of participatory and communication culture; (19) biased role of media in advertising urban projects (BWP); (20) apathy of population concerning semi-legal, anti-constitutional, neglected public interest issues in BWP; (21) Lack of strategic development goals for cultural institutions and agendas - activities and initiatives (such as those in Savamala) are short lasting with no certain future (Vujosevic 2015); (Petovar 2015); (22) civil initiatives in Savamala have neither socio-political power, nor sufficient public support and funding (Petovar 2015) (Table 5,6).

Chapter 8

Conclusions

8.1 Conclusions related to the research framework

xxxx ...

[..] to the research objectives

An inclusive and dynamic urban development model, as outlined herein, constitutes a challenge with regard to redefining the scientific approach to urban conflicts through a the MAS-ANT methodological approach as an urban development strategy that ultimately aims at generating a new vision of cities that is best suited not only to post-socialist cities and transitional countries.

8.1.1 [..] to the research questions

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8.1.2 [..] to the methodological approach

communicate research-based data to nonspecialists.

Flyberg: Misunderstanding 4: The case study contains a bias toward verification, that is, a tendency to confirm the researcher's preconceived notions. ANT reduces researcher bias

ANT ANT approach facilitates logical argumentation for urban dynamics and enables mapping the urban development process and visualizing actors and networks through diagrams. In order to interpret urban development of Savamala, specific political, economic and cultural aspects are treated also as actors (social artefacts). Distribution of these networks are traced within the map through the identification of (1) key actors involved, (2) levels of decision making it stems from, (3) sets of social aspects aggregated together. The key findings are articulated through a comprehensive description of on-site complexity and dynamics, which these conflictive political, economic and cultural aspects produce. In our approach we kept certain traditional concepts from urban theory and practice,

but reinterpreted them in ANT logical framework. In this manner, we clarify what type of networks (urban assemblages) these conflictive social aspects address. Moreover, the users of this map (professionals) are able to indicate gaps (networks and actors) for possible operational interventions on the respective aspects. Urban reality and developmental circumstances in Savamala illustrated herein seem to represent bits of transitional chaos which post-socialist countries face. Not to mention that, capital cities are personification of such development schizophrenia (Vujosevic 2015) while being the focal political, economic and cultural nodes as a legacy of once centralized state. This exercise of visualizing through ANT methodological approach expresses an attempt to depict the complexity of urban actors, forces and artefacts to a legible scheme of links and nodes inspired by the similar endeavour from Marshall and Staeheli (Marshall and Staeheli 2015) . We recognize the quality of ANT scientific approach as an explanatory construct that studies associations and symmetrical relationality (Farias et al. 2009). Without addressing any particular state of affairs, this new perspective minimalizes the importance and influence of permanence of urban structures across time and space, and instead deals with a city as a contingent, fragmentary and heterogeneous, but persistent product of human/non-human actors, intermediary/mediator roles, concrete associations, stabilizing and destabilizing agencies and urban assemblages. We have shown that all these elements are spatially embedded and harmonized in particular physical set of Savamala. From our research results, we agree with the mentioned authors on the point that ANT interpretation may be a mere entry point or an operational agenda for further research, though we would like to argue that, on this pathway, ANT appear to have limited capacity for going any further from it has brought us by now it appears as unable to receive practical recognition, influence the reality and go beyond identification of the obvious. Bearing in mind that urban development of cities is has surpassed its perception as merely economic, social and cultural venues, the vitality of ANT approach lies in: (1) encompassing the active role of non-humans, (2) seeing the totality of the world as process, and (3) overreaching radical categories of time and space by representing horizontal links and associations. Although these premises grasp the core concept of urban dynamics, this methodology does not imply the capacity to deconstruct and interpret such complex aggregation of all real-life urban processes. In urban terms, ANT is, therefore, still perceived as a conceptual methodology whose integral approach works out only in confined urban environments, where it could comprise a dynamic, interactive process of interdependences and connections among all active urban actors and the formation of urban assemblages through roles, associations and agencies and their calibration within the chain of decision making. In this respect we would like to recapitulate ANT setbacks to stand out as an overarching methodological approach for urban research: ANT in its insistence on general symmetry fails to go beyond the description of the empirical reality of urban processes. Although it succeeds to include causal relations between actors, the future state of the system based on these relations stays undiscovered (Elder-Vass 2008). For example, we have identified how political, economic and cultural aspect signify and engage in several networks, but we do

not have any insight on the valence of these aspects to engage in new networks, while this relation between what is and what will/would/could be is actually the essence of development. Though ANT inaugurate flat ontology of the social (Latour 2005), networks are "narrated" by human constituents (Collins and Yearley 1992; Czarniawska 1997; Whittle and Spicer 2008; Marshall and Staeheli 2015) and interpretations and translations are chiefly the product of the researchers positionality (Rose 1997; Ruming 2009). We acknowledge that our case study diagram reorder and multiply if we go from one actors to the others viewpoint or if we have it re-iterated by other researcher. Therefore, the credibility of ANT as a scientific method can be questioned as it should produce the same results regardless of iterations or agency. Perceiving ANT results only as detailed empirical descriptions means discrediting how and why questions, leads to thinking that its sole aim is maintenance of the system (Amsterdamska 1990; Lee and Brown 1994; Whittle and Spicer 2008), with no regard to prospects of its change or transformation(Gabriel and Jacobs 2008). Similarly, when we examine urban development diagram of Savamala neighbourhood, we see summarized the developmental ows of human collisions and coalitions, finances, practices, information and knowledge, but we do not have any tools at hand to point out where maintenance, transformation and change of the system happens. Finally, with ANT results we are incapable to intervene in an urban system to articulate social practices, anticipate conflictual urban issues, and provide an overview of actions, solutions and changes - and we find these the pillars of urban development. In sum, we comply with the vision of others that ANT theoretical perspective has aspired to explain the totality of the world without relying on "other" frameworks (Lee and Brown 1994, Gad and Jensen 2010), but actually remains on the level of description that may appear insufciently scientic for a methodological approach (Gabriel and Jacobs 2008). Our ANT diagram addresses complexity and provides framework for future extension of actors and new relations when they collide, overlap and interfere in networks. These networks represent system dynamics of cooperative, discontinuous, contradictory or even mutually exclusive relations among actors, whereby, in dynamic terms, the actors and networks are constantly changing and consequently constituting new realities. According to our interpretation, ANT scheme neither can tell us anything about this, nor can it indicate how the urban system maintain, transform or change itself. In this respect, even though we have widen the scope of ANT categorizations and interpretations and have dealt to a certain point with urban complexity, it still falls short to meet the expectations as a potential interpretive tool and urges for methodological revisions, adaptations or complements in order to facilitate an understanding of undercover processes and mechanisms or to provide explanations, recommendations or operational diagnosis on how to cope with developmental dynamics of maintenance, transformation and/or change of an urban system.

8.2 Conclusions related to the theoretical framework

Harrison 2002: Extending the general analytic strategy across cases is referred to as replication (Yin, 1994) Conclusions conflict with the literature. This is a challenge to build internal validity, raise theoretical level and sharpen construct definitions (see Table 9.2).

8.2.1 Urban Development Taxonomy

An inclusive urban development model strengthens horizontal practices and initiatives, unlike the leading urban public institutions, which tend to verticalize this work to create cities. A participatory approach and the MAS-ANT discourse represent a relevant and up-to-date problem-solving strategy that encourages a top-down authority to horizontalize urban planning procedures, thus enabling all urban actors and stakeholders to intervene in their immediate surroundings.

The dynamics of an urban development model addresses the current change in the urban planning paradigm (Rode 2006) towards an open-ended positive future concept with an emphasis on inclusive, transparent and flexible procedures. This urban development model, constructed on the principles of the MAS-ANT methodological approach, encompasses a range of urban codes and freely-available design rules which can be modified and adapted to local conditions and individual needs.

8.2.2 An Ordinary City

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8.2.3 A Post-socialist City

Yin The significance of the case study selection the case study must be significant: of general public interest, nationally important in policy and practical terms

An urban development model deals with deficiencies and incompatibilities between the reality of cities and the existing urban planning tools used. This is done by taking advantage of the incompleteness and the spontaneous urban development of environments in transitional economies: Creating the city through a myriad of strategies from above, interventions instigated by different interests and small changes from the ground up empowers the aforementioned incompleteness of cities, and this gives them their durability, flexibility and importance on the global scale. The case study of Savamala neighbourhood in Belgrade, Serbia within such a incompleteness and the on-going generation of urban conflicts and bottom-up interventions, offers the potential to be constantly remade through a summary of small movements and partial approaches released as an integrated system of urban development.

The case study of Savamala neighbourhood in the post-socialist city of Belgrade in the transitional country of Serbia is not only relevant for the Central and Eastern European region, but it is also applicable to other countries around the world that are undergoing a similar transition to a democratic and market-based system. Transitional economies that

find themselves in an unclear social, economic and political situation are fertile ground for a fragmented, small-scale approach to urban conflicts, which could eventually produce more long-term and far-reaching results. However, research into the underlying forces that drive urban change has been limited notwithstanding the importance of cities in the overall process of economic and social transition. Building an urban development model in a post-socialist context of Savamala is a strategic basis for future interventions and didactic material for further education which surpasses the model of a post-socialist city in a transitional economy on which it has been built.

8.2.4 Urbanity

Building an urban development model starts out from the experiences of all urban actors and stakeholders in order to better evaluate the dynamics used in the creation and administration of their area of living and to practically apply theoretical knowledge and scientific solutions to improve life in cities. This method mobilizes the populations to form an integral part of all decision-making processes through the education and communication strategies built up on the basis of studying local cases that participants can relate to, and which serve as an experimental field. Furthermore, an inclusive urban development model in real urban environments activates unconscious creativity and it coordinates and articulates this process of collective planning procedures which depends on the individual's direct experience as well as on their sense of well-being.

8.3 Practical Implications

The rise of the global economy is intrinsically anchored in the flow of information and the development of communication technology (Sassen, 2012). Furthermore, these factors have influenced the perception and constitution of reality, they have allowed accelerating process of globalization, a shift from traditional industrial activity to the dispersion of production, a transfer of products, hypermobility of capital and a redefinition of physical space (Firmino et al 2008). In this way, technological capacity has become one of the major premises for competitiveness at a global economic level (Castells, 1998). This techno-economic paradigm is a cluster of interrelated technical, organizational, and managerial innovations: First of all, technologies act on information, not just information to act on technology. Secondly, with information forming an integral part of all human activity today, all processes of individual and collective existence are directly shaped by the new technological medium. Finally, the networking logic of any modern system or set of relationships is grounded in these new information technologies where the user-friendly aspect of technological innovation has expanded the application of a user-oriented world wide web (Silva, 2010). With this development and its global impact, information technology has become widely and deeply embedded in our daily life and much of the economic, social, political and cultural action shifts into cyberspace (Mitchell, 1996), in the form of a legitimate second reality where single, integrated, unitary, material objects have all been

reconceived (Baudrillard, 1983) and their interrelations revised in a new concept of space of flows or space of relations (Graham and Healey, 1999). Controversially, it does not make the actual places (urban spaces) redundant, but rather it initiates an active reconstruction of urban places (Graham and Marvin, 2001) as social constructs whose meaning depends on particular social contexts and their nodes of intersection (Healey, 2004). This gradually changes the concept of ICT-oriented urban planning strategies to the ubiquitous city (Huang, 2012). Cities tend to urbanize technologies semi-autonomously with increases in density and networked systems that the new technologies have made possible. Thus, it is necessary to shift the technological determinist concept to a more comprehensive, network-oriented vision that considers infrastructure networks, user networks, and their interfaces to generate ICT-oriented urban strategies (Huang, 2012). Finally, when applied to transitional economies (which lag behind the successful western countries in ICT terms), this advanced technology inflow within a city is also conspicuous although the interchange between modern science and the social aspects is somewhat subtle. There emerges, however, a growing discrepancy between the dynamics of city growth and the weakness of technical supervision; not only in the course of human factors, but also in technological sources and solutions (Vauquelin, 2010). Nevertheless, as ICT means and instruments become an inherent part of modern societies in transitional economies, they can serve as an intermediary in the process of social practice actualisation within an urban environment.

8.3.1 Urban Development model

The potential lies in the dynamics of a modern scientific approach in research and how to implement it in urbanism; namely, how potent urbanism is to be semi-dynamically programmed considering, of course, a large background database. Corresponding to factorial analysis, defined pattern-models will be performed, so as to have visual representation of facts which are able to lead to urban progress in developing countries. According to the analysis of characteristics mentioned above, crucial relations between terms could be established by an a posteriori approach to the vast range of collected data through an archival working process in order for their entailment, implication and structuralisaton. What is here even more important is a multidimensional approach which should allow for the making of a graphical representation of these analyses which are by themselves complexes.

8.4 Limitations of the research

Harrison 2002: trade off between knowledge and time The data cannot be collected as originally planned. This may call for an adjustment to a particular variable, or it may mean a major re-think.

Flyberg: Misunderstanding 5: It is often difficult to summarize and develop general propositions and theories on the basis of specific case studies.

8.5 Future Prospects

An appropriate technology for urban development in transitional economies is the one that carries wider social repercussions for such a specific scientific innovation (Bolay et al. 2011). The flexibility and the trial and error iterations of an urban development model represent a catalyst for change and a means of seizing opportunities inside an urban environment, and converting these into development tools. In this way, the urban planning procedure becomes an innovative, dynamic mechanism which mirrors simultaneous social and spatial circumstances in an urban context.

The transdiciplinarity of an inclusive urban development model is enabled through transversal collaboration among equally valuable fields and individuals where proposals and solutions are common property and responsibility and solving problems goes beyond the specialized field. Its effectiveness and driving potential lie in its capacity to exceed the abstractions of urban planning, the concrete specifics of urban design and the politicization of urban transformations and participatory processes, bringing all of these together into united solutions that work as bridges for realms of ideas.

An inclusive and dynamic urban development model fosters social inclusion and addresses informality and it also meets Millennium Goal (goal 7, target 11) prerogatives. In transitional countries, different marginalized groups and social groups that have resorted to informality constitute a significant percentage of the population. Belgrade, for example nowadays has between 1/3 and 1/2 of its housing stock informally constructed (Grubovic 2006) and Savamala, with its spatial and locational potential, is a breeding ground for real estate speculations. In this respect, if we take their needs, financial capacities and lifestyles into account as equal urban agents, this eventually leads to improvements in their living conditions. Therefore, an inclusive and dynamic urban development model is actually an articulation of human life in an urban realm which encourages active citizenship.