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A blueprint for strategic urban research: the *urban piazza*

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Abstract

Urban research in many countries has failed to keep up with the pace of rapidly and constantly evolving urban change. The growth of cities, the increasing complexity of their functions and the complex intra- and inter-urban linkages in this ‘urban century’ demand new approaches to urban analysis, which, from a systemic perspective, supersede the existing fragmentation in urban studies. In this paper we propose the concept of the *urban piazza* as a framework in order to address some of the inefficiencies associated with current urban analysis. By combining wealth-creating potential with smart urban mobility, ecological resilience and social buzz in this integrated and systemic framework, the aim is to set the basis for a ‘*New Urban World*’ research blueprint, which lays the foundation for a broader and more integrated research programme for strategic urban issues.

Keywords

New Urban World; urban piazza; buzz; resilience; sustainability; mobility; connectivity; diversity; entrepreneurship; innovation

¹Sometimes related terms such as ‘ethnic entrepreneurship’ or ‘minority entrepreneurship’ are also used, but we prefer to use the more neutral term ‘migrant entrepreneurship’.

Introduction

More people than ever before live in urban areas and a larger percentage of urban inhabitants are moving to large cities. This raises the question of why people are attracted to large cities. Large cities are not just providers of jobs. They are also powerhouses of creative ideas, innovative technologies, sustainable development and socio-economic wealth in an open and globalising economy – and most likely this trend will continue. As stated by the World Bank *World Development Report 2009* (World Bank, 2009), cities will undoubtedly play a pivotal role in the future of all countries, although challenges are unavoidable. Emerging threats to urban environments may, however, be turned into new opportunities (Nijkamp; and Kourtit, 2013). Thus, in a way, challenges stemming from burgeoning urban areas may act as the sharp spear-heads that force movement towards necessary policy development in the areas of, for example, sustainable economic development or ‘smart’ growth.

This paper neither intends to unveil new empirical findings, nor provide new methodologies for what is a growing area of urban research. Instead, our contribution is deliberately broad, with a purpose geared specifically at delivering a new framework – the *urban piazza* framework – aimed at integrating and making sense of our current knowledge of what makes cities special, what helps them thrive and what factors must function in tandem to ensure their continued success. This framework is intended to be the seed of a research blueprint aimed at better comprehending, but also better analysing and harnessing, the development of this ‘*New Urban World*’, with the aim of facilitating facing the challenges and maximising the opportunities that rapid urbanisation offers. Clearly, our ambition is not to provide a deterministic perspective on the future of cities, but rather to offer a structured platform for reflection on policy and research pathways for cities in the future.

Our view is the long one: we argue that the world is in the midst of a new, enormous urban revolution and that in order to ensure the well-being of future generations, policymakers and researchers must work together to assess where the challenges lie and how to meet them. In many ways our propositions are the consequence of a much broader collective effort. They are the result of a remarkable set of workshops and sessions at professional meetings around the world over the past few years. At these sessions, we requested participants to think outside the box about a number of aspects of urban growth and change. In our efforts to assemble and organise the conclusions of our experts, we have arrived at the metaphor of the *urban piazza* – the historical centre of urban life in ancient Italian cities in multiple dimensions and spatial scales – as a way of thinking about the many contributors to urban development and the ways in which they interact and are interdependent. Thus, the main goal of the paper is to use the *urban piazza* framework in order to offer a prospective research agenda, or roadmap, for the growing urban world around us.

The organisation of the paper is straightforward. The next section presents some very basic facts to support the idea that we are on the cusp of a ‘*New Urban World*’. Following this, the next section provides further justification for the need of a new framework with which to analyse this ‘*New Urban World*’. Then the next section lays out the fundamental

components for the well-founded *urban piazza*. Based on those components, the final section provides our blueprint for how the construction of the *piazza* should proceed.

The ‘New Urban World’

The basic facts

Urbanisation has been rampant in recent decades. More people live in cities; more in bigger cities; and more in very large cities. Overall, more than 50 per cent of the world’s population now lives in urban environments and the rise of cities has continued apace. Between 2000 and 2010 the urban population in the world rose at a rate of 3.5 per cent per annum. The current rate of growth will add nearly two billion additional urban residents over the next twenty years, 90 per cent of them in the developing world (World Bank, 2010), with urbanisation predicted to rise by 80 per cent by 2050 (see Figure 1; for details, see, for example, United Nations, 2011). An increasing percentage of the urban population will be concentrated in large cities. As of 1 January 2013, there were 498 agglomerations with more than one million people (see citypopulation.de). Of these, twenty-eight had more than 10 million – in comparison to only sixteen in 2000 and twenty-one in 2010. And the rise of megacities is likely to continue. By 2025 the world will have 136 new additional megacities, all of them in the emerging world (McKinsey Global Institute, 2011).

These trends will make our planet an increasingly urbanised one, even should overall population growth eventually halt, marking the emergence of a ‘*New Urban World*’, as more people move from rural areas towards an ‘urban way of life’ characterised by a specific and local identity to seek promising socio-economic opportunities (United Nations, 2007; OECD, 2009; Birch and Wachter, 2011; United Nations, 2011). There is, thus, little doubt that the twenty-first century will be ‘the urban century’.

The challenges

The long-term mega-trend in population movement towards the city is the result of two underlying forces: viz., the exponential growth in the world’s population and the rural–urban drift (due to the relatively more favourable socio-economic opportunities in urban agglomerations) (Nijkamp and Kourtit, 2011, 6). This trend is the consequence of both natural population increase and large migration movements in various parts of the world. Urban challenges may thus become the most complex and critical factors of sustainable development in the future (see Beall and Fox, 2009; Lombardi et al., 2012). This mega-trend offers various opportunities for urban development, but at the same time puts enormous pressure on urban areas (giving way to negative externalities, such as pollution, congestion, security issues and social degradation) (Kourtit and Nijkamp, 2013). The question regarding whether positive or negative externalities will take the lead depends on a mix of many forces, which has been called the XXQ-principle – that is, the net balance of all forces leading to a maximum quality of living and working in urban areas (see Nijkamp, 2008; Nijkamp and Kourtit, 2011).

This ‘*New Urban World*’ generates much uncertainty and many challenges regarding potential future economic development trajectories (Nijkamp and Kourtit, 2011; Nijkamp and Kourtit, 2012; Kourtit et al., 2013a; Kourtit et al., 2013b; Kourtit et al., 2013c). The *first*

important challenge is the distinct possibility that the '*New Urban World*'s development path will be uneven, with growing heterogeneity across the world. After all, the '*New Urban World*' does not display a uniform settlement pattern (Rodríguez-Pose and Crescenzi, 2008): it is characterised by a great diversity in living and working patterns, in urban land-use and architecture, in urban management and governing institutions and sustainable competitiveness in both local and international markets.

There is an abundance of literature that traces the roots of rising urbanisation. These are mainly found in the presence of spatial externalities (often in the form of so-called MAR – Marshall-Arrow-Romer – externalities dealing with various economies of scale in urban areas) and social capital benefits (often referred to, in different forms and guises, as 'melting pot' advantages in the spirit of Jane Jacobs (1961), the 'creative class' concept of Florida (2002) and Landry (2000), the 'buzz' concept of Storper and Venables (2004) or the 'islands of innovation' concept of Cooke (1998) and Kourtiti et al. (2011)).

A *second* challenge is related to the issue of sustainability. It has often been argued that cities are meant to be the 'home of man' (Ward, 1976) and will gradually have to meet strict sustainability conditions in a dynamic environment. As cities are generally regarded as hotbeds of positive externalities, the structural influx of people into urban areas will not wane (see also Glaeser, 2011; Owen, 2009). Cities have become magnets for people and economic activity in an increasingly open world (Dematteis, 1988), and socio-demographic changes (for example, ageing), migration and mobility, entrepreneurial dynamics, sustainability and efficiency of transport and energy systems, ICT (and other advanced technologies) and increasing returns to scale in urban agglomerations are the basic forces behind new settlement patterns in our modern society. (Nijkamp and Kourtiti, 2011, 7; Kourtiti and Nijkamp, 2013). Agglomeration also implies that future cities will be arenas for social action, knowledge sharing, economic vitality and ecological sustainability, thus making cities the anchor points of future development (Sassen, 1991; Shefer and Frenkel, 1998; Acs et al., 2002; Scott, 2006; Glaeser and Kerr, 2009; Kourtiti et al., 2011; Van Geenhuizen and Nijkamp, 2011; Nijkamp and Kourtiti, 2011).

The *third* challenge is the juggling of growth with quality of life. In the '*New Urban World*', the balance between agglomeration forces and economic dynamism, on the one hand, and urban quality of life, on the other, becomes ever more necessary. Economic dynamism is essential for the attractiveness of cities, but it may also contribute to undermining the very quality of life that makes cities attractive. Vice versa, a decline in the quality of life linked to, and controlled by, agglomeration trends and growing negative externalities may also dent the prospects of economic activity. Hence, cities have to operate and compete with one another in terms of not only economic dynamism, but also quality and attractiveness (for example, Florida, 2002; Frenken et al., 2007). This implies that cities – often in the form of metropolitan areas – have increasingly run a global race, in which monopolistic competition and product variety play a central role (see, for example, Abdel-Rahman and Fujita, 1990; Glaeser et al., 1992; Quigley, 1998; Becker and Henderson, 2000; Duranton and Puga, 2000).

Agglomeration is at the heart of this conundrum. Scale advantages are essential in order to transform cities into economic growth engines, but too much agglomeration can unleash the negative externalities, which will constrain the very economic activity and quality of life that underpins a successful modern city. Hence, a frequently asked question is: what is the right size for a city (Henderson, 1974; Au and Henderson, 2006)? What level of agglomeration is most successful? That is, which has the highest socio-economic performance? There are numerous attempts nowadays to rank the relative performance of cities in our world. This leads to a new ‘urban imperative’: urban areas must attract, retain and even nurture highly mobile, creative and innovative firms and talent (the ‘pluriformity’ approach), as their aggregate efforts will become the primary drivers affecting the capacity of cities to secure the socio-economic development at the base of urban competitive advantage (Nijkamp and Kourtit, 2011, 19; Martin et al., 2011).

A *fourth* challenge is the result of the changing roles of cities. The urban imperative means that the traditional roles of cities are constantly being redefined in a global competitive system. It also means that demands for high quality amenities and public services are subject to permanent change (Nijkamp and Kourtit, 2011, 20; Kourtit and Nijkamp, 2013). The challenges are: to improve the competitive high performance of cities; to strengthen and establish their regional and local bases; to turn urban areas into attractive and sustainable high quality places to live and work; and to incorporate innovation and technology in overall developmental strategies and to incorporate a richer appreciation of how firms and institutions interact cross-nationally (Murtha et al., 2001, 29, 153, 278; Lenway and Murtha, 2004, 562; Carree and Thurik, 2003; Ionascu et al., 2004; Berry et al., 2010, 1468). All these factors are critical conditions for a promising living, working and business environment.

A *final* challenge inherent in the ‘*New Urban World*’ is the rural transformation accompanying the rise in urbanisation. Towns in rural areas, in particular, face dramatic changes, such as population decline, loss of job opportunities and loss of innovative potential. This means that ‘shrinkage’ phenomena may be a complement to rapid urbanisation. This calls for new research and planning initiatives. It may be added that – apart from densities of people or activities – the traditional distinction between rural and urban areas is rapidly vanishing. Lifestyles (for example, consumption, leisure time) in rural and urban areas tend to converge gradually, mainly as a consequence of high mobility and modern telecommunication (including social media) in an open world. Rurality does not mean backwardness anymore, even though cities often take the lead in the adoption of new lifestyles.

Modern cities thus form the heart of a dynamic society and are breeding places for creativity, innovation, entrepreneurial spirit, socio-economic progress and ecologically sustainable transformation (see, for example, Glaeser, 2011; Van Geenhuizen and Nijkamp, 2012; Rydin, 2012; Kourtit and Nijkamp, 2013; Kourtit et al., 2013a; Kourtit et al., 2013b). In this way, these powerhouses will act as the engines of the world’s economic growth and vitality – i.e. the ‘urban buzz piazzas’ (see Arribas-Bel et al., 2013). In other words, cities seek to provide the highest possible socio-economic quality, in order to attract and retain creative and talented actors (employees, self-employed or entrepreneurs, but also residents and visitors), so as to generate positive externalities. The presence and experience

(individual visions, preferences and values) of creative minds in urban environments can nurture the critical conditions for enhancing the level of attractiveness of cities. It may be the case that the value that firms put on geographic space regarding location decisions based on their preference intensities and criteria for visual assets may not only positively influence these firms' (business) performance and strategic choices, but also further enhance the dynamism of the city. This may bring about positive socio-economic achievements, which, in their turn, may enhance the attractiveness of modern cities and urban agglomerations and, ultimately, achieve a high degree of sustainability and competitive advantage (Martin et al., 2008). In this context, regions and cities have to listen to various stakeholders and offer unique geographical and location conditions and facilities – beyond other competitive assets – in order to attract talent and for firms to generate positive externalities as a way to improve their economic performance. To do this, a prominent focus on the urban areas' performance from a global perspective is needed to stay competitive and profitable when facing local and national challenges in the long-run (Zeng and Zhao, 2005).

Making sense of the 'New Urban World'

The global transition towards an urban mode of life is not just a sheer demographic phenomenon. It stems from a complex force field in which spatial competitiveness, creative minds, economies of connectivity and urban spirit play a critical role. Clearly, modern technology (for example, logistics, ICT, biotechnology) offers the conditions for an urbanised way of living and working, but it is also the result of the 'urban spirit' in a modern society. The awareness has grown over the past couple of years that cities or urban agglomerations are the best vehicles to address the future challenges of our world.

The multifaceted nature of the challenges that affect this '*New Urban World*' demand a series of theoretical tools that would allow us to analyse, but also to comprehend and harness the nature of these changes and how they will impinge on the future development of the city. There is a need for a more proactive and open-minded urban governance blueprint paying due attention to the involvement of a plethora of actors and stakeholders whose interests may not necessarily coincide (the wealth of new civilization à la Toynbee (1947)). It is therefore necessary to design and map out, from a quantitative perspective, the relevant indicators that shape the multi-level creative resources of cities and urban agglomerations. This is a necessary step for any benchmark study or strategic performance analysis of the success conditions and failures of urban governance systems. Such cultural, creative and innovative resource indicators should be transparent, manageable, testable, comparable, representative and policy relevant (Nijkamp et al., 2010). They should also be manageable in both size and scope. The use of such a blueprint would create unforeseen possibilities and new opportunities for the emergence of fresh, new, cultural and innovative urban perspectives. All this requires novel scientific insights and policy strategies in order to make the urban future '*a place 4 all*' (Kourtiti and Nijkamp, 2013). Such policy initiatives would need to be supported by solid, multi-disciplinary and evidence-based research on the challenges and opportunities of urban systems worldwide (see also Nijkamp and Kourtiti, 2013).

In this paper we propose an *urban piazza* framework; a framework that metaphorically offers a systematic structure for a comparative analysis of urban governance systems' performance. The *urban piazza* framework aims to encompass in a coherent way the anchor points for effective actions and resources reflecting the multifaceted diversity in urban challenges and the innovative responses of urban governance systems. In this respect, it intends to provide a benchmark and offer a systematic comparative overview of the performance of actors in an urban system. The *urban piazza* seeks a balance between: (i) growth-inducing and growth-hampering factors; (ii) multiple layers of actors and structures in a city, both at the micro and macro levels; and (iii) intra-urban and extra-urban force fields and networks. The ultimate aim of the approach is to maximise the socio-economic and ecological performance of cities and to cope with negative externalities and historically developed path dependencies (see also Nijkamp, 2008; Nijkamp and Kourtit, 2011, 15; Nijkamp et al., 2011) so that the (international) competitive position of cities in terms of their attractiveness is strengthened.

The *urban piazza*: a prototype design

Cities are not static entities, but living organisms that have to be fit to achieve a high quality performance (the XXQ-principle). Numerous empirical and comparative studies have in the past sought to compare the competitiveness and attractiveness of urban systems by mapping out the relative performance profile of global cities (see Friedmann, 1986; Sassen, 1991; Grosveld, 2002; Taylor, 2004; GaWC, 2008; Institute for Urban Strategies, 2010; Caragliu et al., 2011; McKinsey Global Institute, 2011; Taylor et al., 2011; Kourtit et al., 2012). These studies have not only addressed the internal and external context, the strategies, the priorities and the economic performance of particular actors in the urban system over time, they have also attempted to design a ranking system that gives a broader comparative insight into the economic performance of these cities in order to provide a systematic performance assessment basis – or benchmark basis – for cities. These approaches contain 'focused handles' (evidence-based information) on how to improve their relative position on the basis of their contribution to economic progress or better performance (see also Cerreta et al., 2010). The approach used has typically been an exploratory comparative benchmarking analysis of the differences in performance, accompanied by a search for high performers.

The *urban piazza* framework proposed in this paper draws from these sources, but focuses more on the mutually interlinked and dynamic forces that are critical in the performance of various actors and/or cities that seek to optimise sustainable outcomes for communities in terms of competitive economic and sustainable development. It involves a careful screening and filtering of various mega-trends and challenges affecting cities (for details, see Nijkamp, 2010; Nijkamp and Kourtit, 2011; Nijkamp and Kourtit, 2012), which have led to the identification of four important dominant classes of challenges and critical conditions in the twenty-first century in the '*New Urban World*'. These challenges and critical conditions have therefore been organised around four interconnected pillars that form the anchor points for multi-level spatial capital resources and policy measures related to the performance of urban systems, viz.:

- *economy and innovation*: creative economic and entrepreneurial capital;

- *mobility*: infrastructural, logistic, connectivity and communication capital;
- *society*: social and cultural capital; and
- *ecology*: environmental and ambiance capital.

This multidimensional set of strategic performance measures, resources and perspectives, which are interconnected with and balanced against each other, can be integrated in an *urban piazza* framework aimed at analysing and harnessing the health of urban systems' performance in the 'New Urban World'. The *urban piazza* is a metaphor for an ideal–typical urban constellation. It represents essentially a combination of traditional and innovative performance measures organised according to a systematically structured and balanced four-pillar strategic framework. These four pillars are each of critical importance for the new urban governance system of a spatially interconnected and networked world. A focus on the intersections of these four distinct cornerstones is a *conditio sine qua non* for understanding, evaluating and comparing modern cities.

These pillars may be used as overarching research vehicles in our study – in particular, for identifying a set of internal characteristics along with contextual conditions at both the sectoral and spatial level. Graphically, the *urban piazza* can be sketched by means of a multi-level conceptual model (see Figure 2).

In the ancient world, the *piazza* was a vital part of the city's local and global culture. It was seen as a gathering spot, a market for commerce and an architectural and historical area. The *piazza* is not only the geographically central place in the city; it is also its emotional centre, which radiates heat and energy out into the whole city and its surroundings. It presents a general public centre with a high intensity of social life, superior to the chaotic, traffic-dogged, narrow streets leading to tiny squares and boasts a colourful character where the city's main urban life and activities take place and shape the highly vibrant atmosphere, creating 'XXP' (the maximum contribution to productivity, quality and profitability in the urban socio-economic system) (similar to the above-mentioned XXQ concept, see Nijkamp, 2008). This vitality is needed for the *piazza* to become a new part of a future productive urban landscape (Fishman, 1977; Hall, 1988). It is a visible place where people gather, meet and interact and where the *social and cultural capital* of a city is concentrated. It is also a place to relax and enjoy the architectural and historical quality of the city, with a wealth of *environmental and ambiance capital*. Furthermore, the *piazza* offers a place to do business and create urban wealth, so that it is also a geographic concentration of *entrepreneurial capital*. And, finally, it is a place at the crossroads of many street and transport routes, so it may also be seen as the *connectivity and communication capital* in the city. The *piazza* thus becomes a metaphor for the capacity of cities to join and exploit new synergies regarding the multi-layered, dynamic urban system, with a view to creating a liveable, sustainable and economically viable environment for multiple layers of actors and structures in a competitive urban world. Therefore, the *piazza* is a historically important breeding place of new civilization and wealth and serves as an attractive, high quality and sustainable place to live and work. It is a core place for sustainable development for the entire urban system as a result of its dynamism, while it has, over the decades, reinforced the position of cities as magnets in a spatial–economic force field.

Over the centuries, the *piazza* has been further utilised as a multi-functional and energetic creative urban artefact that emphasises the city's rich complexity, has actively and passively contributed to cohesion and progress and heralded the birth of different initiatives, resources and perspectives for urban development. Even in modern cities across a large number of countries (in Europe, Latin America, Asia), the *piazza*, the *plaza*, the *markt*, the *ploshads*, the *kvadrat* or the market square is still a landmark – if not the main landmark – of the city. We intend to use the *urban piazza* as a metaphor to comprehend the complex interactions in modern city life (XXQ), which – following what has been previously mentioned above – we have classified into four categories:

1. social buzz;
2. ecological resilience;
3. smart urban mobility; and
4. wealth-creating potential.

Urban planning and governance presupposes not only appropriate attention for each of these four challenges, but also a balanced focus on the interfaces across them. We will now consider the four challenges individually and then address the interconnected nature of these concerns throughout the four sections that follow.

Social buzz

This concept is not only related to technological advances, but in particular to soft factors, such as *social networks*, *cultural diversity* and *socio-economic capabilities*, as these may improve the quality of society's collective welfare and transfer its human capital into greater socio-economic prosperity, which facilitates spillovers and the rise in knowledge necessary for productivity, innovation and sustainability (see also Nijkamp, 2008). This may then lead to a new focus on the role of learning and skills in the local and global innovation economy. However, sustainability is not only related to environmental quality conditions (such as air or water quality), but also has to do with general quality of life conditions in cities, such as social participation, cultural ambience and socio-economic health (see also the well-known Brundtland Report, WCED 1987; Nijkamp and Kourtit, 2011, 9). A focus on social participation is key when facing urban challenges. In recent years, a wealth of literature has been produced on social capital (see e.g., Putnam, 2000 and Nijkamp and Poot, 2014), but the nexus of city life and social capital is still a puzzle to be further investigated.

Social networks—Social networks are society's soft-wired communications mechanisms. They provide the means by which innovation and creativity are transferred and flourish. The access to *social networks* refers to bonding and bridging behaviour of people, for example, socio-economic linkages, community support systems, entrepreneurial networks, informal network relations and so forth (Stough et al., 2011). This social capital may improve the quality of society's collective welfare and help translate its human capital into greater socio-economic prosperity.

Cultural diversity—For the foreseeable future, urban agglomerations will continue to be a melting pot of people who bring their creative minds to full fruition in their adopted cities.

Modern cities in our open world tend to become magnets of diverse migrant flows. As a consequence, such cities are likely to become spatial concentrations of cultural diversity. In the past decade, the concept of cultural diversity has led to vivid debates on its advantages and disadvantages. In a recent paper by Nijkamp and Poot (2014), the various aspects of cultural diversity have been investigated from an analytical–qualitative perspective.

The various dimensions of cultural diversity are pluriform and multi-faceted. Together they form a complex urban ecosystem, which may induce both cultural vitality and high socio-economic performance. This is often reflected in higher degrees of innovativeness and entrepreneurial performance, at various levels, e.g. from firm to city, region to country (Kourtiti and Nijkamp, 2011; Ozgen et al., 2013). It should be noted that a rise in migrants with a different cultural origin – located in the same metropolitan area – may induce cognitive externalities in the form of creative minds that may act as a source of competitiveness for modern cities. At the same time, they also help the cities' efforts to enhance their global profile, for instance, by attracting foreign direct investments or knowledge-intensive activities. Thus, we may conclude that cultural diversity has great potential in improving the creative capacities of urban agglomerations.

Cultural diversity may offer the opportunity of enhanced quality growth of cities, if the social costs of agglomeration forces (e.g., conflicts, social stress, crime etc.) are lower than the social benefits emerging from the social cultural urban fabric. Urban policy should be based on a balanced strategy, that aims to optimize the net benefits from a multi-faceted urban ecology. In conclusion, cultural diversity is a critical success factor for urban welfare enhancement. There are many examples which show that substantial cultural diversity may improve welfare and wellbeing in cities.

Socio-economic capabilities—In many cases, cities offer the creative network conditions for acquiring new knowledge and expertise. In recent years, the resource-based growth perspective has clearly extended its scope from physical resources to human and social capital resources (Nijkamp and Kourtiti, 2011, 16). It is nowadays broadly accepted that regions and cities – and sometimes urban districts in a Marshallian sense – may use their indigenous resources and offer unique geographic and location conditions and facilities to attract talent and firms to regions in the belief that they generate (more) positive externalities. In turn, this may bring about positive socio-economic achievements, which may enhance the territorial competitive advantages. As a result, over the past couple of decades, cities and their creative districts all over the world have managed to reinforce their socio-economic positions, with the occasional ups and downs.

The scientific views on the position of global, international and connected (or network) cities have significantly changed over the years. Cities increasingly act within a system of connected networks that serve as strategic alliances for the development of our world. From this perspective, urban agglomerations are not necessarily a source of problems, but offer integrative geographic action platforms for creative solutions and new opportunities. Since the seminal work of Jacobs (1961), we know that social capital and human capital are essential for smart and booming urban economies (Nijkamp, 2008; Nijkamp and Kourtiti, 2011). To meet a wide array of future challenges, urban agglomerations have to be smart

and resilient. Over the years, modern economies and cities have dramatically changed the ways of managing dynamics in urban development. Nowadays, urban dynamics depends heavily on the performance in generating and utilising new knowledge, creativity, innovations and technologies (Forte et al., 2005; Lombardi and Cooper, 2008; Nijkamp et al., 2009; Kourtit and Nijkamp, 2011; Nijkamp and Kourtit, 2011, 8) for building a sustainable development progress. Essentially, this means that creativity and sustainability are basics for the ‘survival of the fittest’ strategies of modern cities. According to the modern resource-based perspective, human and social resources, such as local capabilities and urban seedbeds, are decisive for the relatively stronger position of cities, especially from a business perspective. In the view of resource-dependence theories, it is particularly young and innovative entrepreneurs who have articulated a need for new and accessible knowledge, but they cannot generate this knowledge by themselves (see, for example, Reid and Garnsey, 1998; Lockett and Thompson, 2001; Van Geenhuizen and Nijkamp, 2009; Nijkamp, 2010; Nijkamp and Kourtit, 2011, 16).

Ecological resilience

Ecological resilience is particularly concerned with the broader environmental basis that is a prerequisite for sustained, long-term development. Three elements are particularly important in this context: environmental quality, urban amenities and cultural heritage, and smart energy systems (Nijkamp, 2008). Together, these three components represent drivers that create a socially sustainable society supported by smart cities. Furthermore, these factors ensure that the regional or urban economy benefits from the related knowledge spillovers together with sharing and developing new knowledge and improving or promoting innovations in regions that generate economic wealth and achieve competitive advantage.

Environmental quality—The traditional roles of cities are constantly being redefined as demands for high quality amenities and public services increase. A thriving urban area must be able to ensure sustainable accessibility and mobility throughout the urban system and simultaneously develop effective measures to minimise its ecological footprint. The existence of environmental quality conditions takes for granted that the presence of green and blue space (e.g., parks and water), for example, or an attractive urban climate may enhance the innovative and sustainable potential of cities (Kourtit and Nijkamp, 2011; Stough et al., 2011). The growing importance of environmental changes and the fast dynamics of socio-economic development are sources of enormous pressure on urban areas worldwide and will intensify and prompt the need for innovative and effective (public and private) policy approaches, instruments and techniques, which encourage cities to enhance urban quality, vitality, liveability and accessibility for the benefit of future generations (Healey, 2007; Nijkamp and Kourtit, 2011, 19).

Urban amenities and cultural heritage—Cities want to offer a place/destination where the ‘visitor’, in his or her role as worker, traveller or private person, is welcome (Ray, 1998, 5; Breukel and Go, 2009; Bruinsma et al., 2009). Many cities and regions host a wealth of cultural attractions and have to compete for the favours of potential visitors and residents (Bruinsma et al., 2010). In general, culture has become a crucial urban resource in a post-industrial economy, as reflected in the use of cultural heritage in the development strategies

of the European Union and other national and international bodies (see Ray, 1998, 5; Richards, 1998, 2000; Durmaz et al., 2010; Kourtiti et al., 2013c). Cultural heritage is increasingly recognised as an important contribution to the branding of cities. It acts as an attraction force for people from different places of origin, while stimulating local socio-economic development, as well as reinforcing a sense of local identity and pride. This means that cultural heritage is not only a source of historical information or place identity affecting the image of the attraction itself, but also influences the broader image of the city with far-reaching implications for quality of life in a broad sense (Fusco Girard and Nijkamp, 2009; Nijkamp et al., 2009; Bruinsma et al., 2010, 3).

Cities must use their indigenous resources – for example, arts, music, culture and heritage – in order to identify and transform ‘places’ that affect the various actors’ experience. These urban cultural ‘amenities’ shape the character of the city and its attractiveness for both residents and tourists. Indeed, it is a fact that the cultural sector represents a productive branch which is growing in importance (Herrero et al., 2006, 41). The cultural amenities and activities form part of the positioning and marketing strategies of cities and regions, especially in the context of sustainable development, where information and communication technology (ICT) tools may play an increasingly significant role. The role of ICT tools in setting the overall strategic direction can affect the coordination of functional activities and their outcomes in cities or particular destinations (Bruinsma et al., 2009; Breukel and Go, 2009). Not only does ICT allow firms to market their services, but cultural heritage attractions may also benefit from the new options available (Nijkamp et al., 2009; Bruinsma et al., 2010).

Smart energy systems—Ecological sustainability is focused on strategies through integrating sustainable and environmentally friendly energy, buildings, production and transportation systems related to the development and implementation of new transportation and energy concepts characterised by high efficiency, safety and a reduced ecological footprint (Nijkamp and Kourtiti, 2011, 21). Increasing populations living in reduced land areas inevitably raise the challenges of maintaining or increasing the standard of living, without excessive cost or increased environmental damage. The future successful city will be one which has harnessed the challenge and potential of smart energy provision.

Smart urban mobility

The notion of ‘smart urban mobility’ addresses, in particular, the network character of cities (see also Nijkamp, 2008). It is concerned with global–local connectivity, accessibility and advanced infrastructure and logistic systems, which demonstrate how the interdependent aspects of various networks that comprise regional attraction resources result in visible socio-economic performance patterns of regions and cities (see also Nijkamp, 2008). This increasingly means access to global relationships and networks or connected cities.

Global–local connectivity—In the present era, cities are increasingly becoming integrated in complex connected networks (*‘network cities in city networks’*) and accommodate a rising share of the socio-economic activities of a nation as a result of proximity and density externalities. These spatial urban constellations have been studied in

the urban science literature from a variety of different analytical perspectives (for a review, see Nijkamp, 2010). Every-where, cities and metropolitan areas are, to some extent, operating like business firms in an open, globalising world. Traditionally, infrastructure has acted essentially as the backbone of an interconnected economy, with a fractal representation at various geographical scale levels (see, for example, Batty and Longley, 1994). The views on the position of global, international and connected (or network) cities have significantly changed over the years (Nijkamp and Kourtit, 2011, 8). Cities increasingly act in a system of connected networks that serve as strategic alliances for the development of our world (for an extensive urban network analysis, see Neal, 2012). Cities are not only connected through conventional physical infrastructure, but also through modern digital infrastructure and virtual connectivity, thanks to the introduction and large-scale penetration of information and communication technologies (ICT) in all sectors of the economy (see, inter alia, Cohen et al., 2002; Cohen and Nijkamp, 2006). This connectivity capital may have positive effects on the production and consumption side of the economy.

Accessibility—Accessibility and connectivity are of critical importance for urban vitality in an open economy (see also Wegener and Fürst, 1999; Bertolini, 2006). In addition to the strategic re-profiling of urban areas into integrated network cities (including polycentric patterns), we also observe a new gradual transformation of urban agglomerations into regional, national or even global spatial-economic networks. Worldwide, urban areas are becoming centripetal and centrifugal nodes in complex multi-layer networks (Taylor, 2001, 2004; Taylor et al., 2002; Burger et al., 2009; Nijkamp and Kourtit, 2011, 10; Kourtit and Nijkamp, 2013) within which regional and national borders will play a less important role. This new development may become an urban revolution, leading to the emergence of, for example, hierarchical networks or interconnected global networks of urban agglomerations. Clearly, this will prompt new research endeavours on complex network analysis. City global networks are a source of creative and strategic research on the future of metropolitan areas. However, the debate on the impacts of ICT on cities already has a respectable history (Castells, 1996; Cohen et al., 2002). Furthermore, a limited number of studies regarding the impact of traditional and digital infrastructure in emerging economies – in particular, China – should also be noted (Démurger, 2001; Ding and Haynes, 2006; Nijkamp and Kourtit, 2011, 13; Kourtit and Nijkamp, 2013). Advanced infrastructure appears to be critical in many cases. An under-investigated issue, however, is the question regarding how cities and urban networks are related to digital spatial connectivity.

Advanced infrastructure and logistic systems—Global-local connectivity and accessibility (discussed above) are factors that help corroborate the ‘death of distance’ hypothesis (see Cairncross, 2001). However, there are increasing doubts about whether the ‘death of distance’ is really occurring (see Wang et al., 2003) and more solid empirical research is needed (see also Gorman and Malecki, 2002; Rodríguez-Pose, 2011). Knowledge networks, exchange of data and information and new forms of virtual communication create economic externalities beneficial to all network agents and participants involved. A good example of modern virtual strategic networks among urban areas is found in brain circulation networks based on ICT advances in a modern knowledge economy. In the context of, for example, future internet, e-mobility, new energy and building concepts,

several cities have already started demonstration activities and positioned themselves as innovative test beds. Modern ICT has led to shrinkage of our world, where in a few seconds we may, in principle, be connected with any other individual in any other place on the planet (Nijkamp et al., 2010). This technological force increasingly means access to global relationships and (informal and formal) networks, as they highlight economies of scale (see also Tranos and Nijkamp, 2013).

Wealth-creating potential

This component refers to the economic foundations for an efficient operation of a sustainable urban area (see also Nijkamp, 2008). In particular, three forces are relevant here: creative and innovative resources, talent and entrepreneurs. All three are primarily responsible for urban innovations, sustainable socio-economic growth and the transformation of regions and cities. An intriguing question is whether the melting pot phenomenon is a benefit or burden for modern urban regions (cf. Jacobs, 1969). The recent literature on creative talent, creative industries and creative cities adopts a positive perspective, as creative minds may stimulate innovative activities and economic growth (Nijkamp et al., 2010). But what are the driving forces and critical conditions for accelerated socio-economic progress of urban regions? In many studies, this still remains a mystery.

Creative and innovative resources

The use of creative and innovative resources may help to address challenges and opportunities. This is further supported by a Schumpeterian spirit, new ways of thinking and acting, and unconventional cultural expressions, and creative and innovative foresights. Creative and innovative capital consists of forces which are primarily responsible for urban innovations, sustainable socio-economic growth, and the transformation of regions and cities. In recent years, much attention has been given to cities as breeding places for creativeness and innovativeness (see e.g. Glaeser, 2011; Stough et al., 2011; Van Geenhuizen and Nijkamp, 2012; Kourtit and Nijkamp, 2013; Kourtit et al., 2013a; Kourtit et al., 2013b). In this context, the concept of buzz cities has gained popularity (see Storper, 1997; Storper and Venables, 2004; McCann, 2008; Rodríguez-Pose and Fitjar, 2013). 'Buzz cities' refers to the innovation-enhancing potential of modern, open, interactive cities. Many cities house a wealth of creative and innovative industries, but the spatial dispersion of these industries over distinct types of cities varies significantly (Kourtit et al., 2013c). Nowadays, the creative sector is often seen as one of the most expansive economic branches in the innovation industry, as it combines cognitive talents with spiritual and managerial originality. The spatial concentration of these activities, involving spatial and social proximity, increases the opportunities for interaction and knowledge transfer, while the resulting spillover effects reduce the costs of obtaining and processing knowledge. In addition, knowledge workers preferably interact with each other in agglomerated environments to reduce interaction costs, and they are more productive in such environments (Florida, 2002). Following this argument, cities are the cradles of new and innovative industries. Companies in the early stages of the product and company life cycle – when dealing with manifold uncertainties – prefer locations where new and specialised knowledge is abundantly available at relatively low costs (see, for example, Camagni, 1991; Audretsch, 1998; Cohen and Paul, 2005; Nijkamp, 2008, 8; Van Geenhuizen en Nijkamp, 2008, 2009;

Nijkamp, 2010; Nijkamp et al., 2010; Nijkamp and Kourtit, 2011, 15; Nijkamp et al., 2011). Cities also offer enormously rich potential for a wide array of innovative business opportunities. Firms in creative industries may achieve more sustainable business success in a dynamic and competitive environment, as compared with other industries (see, for example, Beise and Stahl, 1999). These successful firms normally adopt a high degree of professional specificity to generate significant added value for the stakeholders, both economically and spiritually. They are often characterised by rapidly changing design specifications in order to serve increasingly individualistic lifestyles (Scott, 2006, 3; Murphy and Redmond, 2009, 20). This emerging 'New Economy' is characterized not only by new types of industry, but also by the fact that these emerging industries can make a significantly higher contribution to growth and innovation within the broader knowledge-based society (Lee et al., 2004; Scott, 2006, 3; McGranahan and Timothy, 2007; Murphy and Redmond, 2009, 20). Policymakers often view these industries as key contributors to industrial creativity and innovation performance, technological change, social development and (building and sustaining) economic growth and progress (Jones-Evans and Klofsten, 1997; Bommer and Jalajas, 2002; Kourtit and Nijkamp, 2010).

Cities may thus offer potentially creative resources that can enhance the total factor productivity of all agents concerned, both private and public, as these resources will stimulate innovation in a broad sense. Consequently, resource diversity may be seen as an explanatory factor for differences in regional performance and growth potential (Nijkamp et al., 2010). These resources may be diverse in nature, caused by factors such as geographical accessibility, locational advantages, a sense of entrepreneurship and leadership, innovative attitudes, risk- or opportunity-seeking behaviour, knowledge intensity, ethnic-demographic diversity and so forth (Nijkamp et al., 2010; Kourtit et al., 2013d). It is plausible that resource-rich regions will be prompted to be more creative and better performers than less privileged regions with a lower territorial capital intensity. Furthermore, availability and use of productive regional resources is not an exogenously given phenomenon, but may be influenced by deliberate policy actions, such as infrastructure policy (for example, roads, railways), suprastructure policy (for example, knowledge investments, education, R&D policy, industrial leadership) or institutional policy (for example, participatory and responsive modes of public policy). The theoretical foundations for this line of thinking can be found in various recent paradigms, such as regional endogenous growth theory, the new economic geography approach, the innovation and entrepreneurship approach or the creative class literature (see, for example, Capello and Nijkamp, 2009; Nijkamp et al., 2010). The general finding from the recent literature is that regions are, to a large extent, determinants of their own fate. Regions today are involved in a competitive battle over creative resources, as their competitive advantage is determined by their innovation potential incorporated in these creative resources. To assess the competitive advantage of regions (see Porter, 1990), it is necessary to design and map out in a quantitative sense relevant indicators that shape these creative resources of a region (Nijkamp et al., 2010).

Talent—Talent is generally regarded as a further key determinant of urban economic growth and innovation. It includes a broad variety of occupations and actors in an urban system. Cities offer, in many cases, appropriate seedbed conditions for the emergence of

creative talent through their abundant availability of services and facilities. In both the open innovation literature and the creativeness literature, the notion of knowledge externalities plays a critical role. In both cases, a positive contribution of knowledge and knowledge spillovers to economic growth is taken for granted (see also Cooke, 2006). This creative human and knowledge capital may be considered an important input that facilitates spillovers and the rise in knowledge necessary for productivity, innovation and economic growth and may lead to a new focus on the role of learning and skills in the local innovation economy. This also includes knowledge capital, which ensures that the regional economy benefits from the related knowledge spillovers together with sharing and developing new knowledge and improving or promoting innovations in regions that generate economic wealth and achieve competitive advantages.

Creative talent becomes an innovation engine by combining pedagogic knowledge transfer from others, learning-by-doing mechanisms and auto-cognitive mental development. Creative minds generate new ideas and practices, acting as effective growth engines in modern cities (Coulson and Leichenko, 2004; Gilderbloom et al., 2009). They can be seen as new catalysts for urban development (Throsby, 2001). It is taken for granted that the overwhelming presence of creative talent in many modern cities is not only the offspring of educational capital in urban areas, but also the offspring of both social capital ('communication as the source of creativeness') and cultural capital. There is much evidence that the presence of creative talent has manifestly positive implications (see, for example, Kourtiti et al., 2013c). Numerous studies have in the meantime demonstrated the significance of the presence of a creative urban or regional environment. Admittedly, the urban creativity notion has also met with serious criticism as regards its conceptual basis, methodology and spatial relevance (see, for example, Peck, 2005; Markusen, 2006; Batabyal and Nijkamp, 2013), as well as the empirical validity of the creative class paradigm (Glaeser, 2005; Comunian et al., 2010).

Entrepreneurs—In an open world driven by global competitiveness, many regions and cities are challenged to form a 'creative geographic space' by novel governance models and to develop new ideas to implement an effective strategy for public interventions at the local level by encouraging the development of creative entrepreneurship and ensuing economic growth (Tornqvist, 1983; Andersson, 1985; Landry, 2000; Bommer and Jalajas, 2002; Florida, 2002; Kourtiti et al., 2011c). This new paradigm has given rise to a certain hype around the concept of a creative, open and globalising world with social, cultural and creative urban environmental factors and mechanisms that are diverse and dynamic (Florida, 2003; Peck, 2005; Forte et al., 2006; Matheson, 2006; Olfert and Partridge, 2011).

Entrepreneurship is a condition *sine qua non* for economic progress, as it is a successful organisational form for inducing innovation and new perspectives in the global, national, regional and urban landscape throughout the world (Pavitt, 1990; Berry and Taggart, 1996; Jones-Evans and Klofsten, 1997; Bommer and Jalajas, 2002; Wennekers et al., 2005; Oakey, 2007; Cooper and Park, 2008). This economic capital is typically instrumental for a higher level of sustainability and innovation, which creates local wealth and generates economic prosperity.

The growing importance of external and environmental changes puts much emphasis on entrepreneurship and has further intensified the need for efficient and effective spatial capital resources, such as human capital, social capital, knowledge capital and innovation capital (see, among many others, Becker, 1964; Mincer, 1974; Bourdieu, 1983; Putnam, 2000; Wößmann, 2003; Bowles and Gintis, 2002; Vandenbussche et al., 2006; Crook et al., 2011; Kourtiti et al., 2013d, 2014), which all encourage businesses to meet challenges, and stay relevant and competitive. Furthermore, the Small and Medium Enterprise (SME) sector is absolutely instrumental for prompting new forms of business and entrepreneurship, while also offering the seedbed for urban immigrants with business-oriented attitudes. They are known as 'ethnic' or 'migrant' entrepreneurs, hence the term 'New Entrepreneurship'. The recent 'New Entrepreneurship' can be found in what is called 'migrant entrepreneurship'.¹ It has become a popular broader concept in a modernising multicultural society and open economy (Van Light and Bonacich, 1988; Waldinger et al., 1990). 'New Entrepreneurship' is often found in formal and informal parts of the SME sector in many urban agglomerations. This new entrepreneurship – in combination with cultural diversity – is increasingly turning into a source of promising economic opportunities for regions and cities. In a multicultural urban space, it also favours the development of socio-political and socio-economic integration in a modern economy (Van Light and Bonacich, 1988; Waldinger et al., 1990; EIM, 2006). It reflects different cultures and open-ended capacities for economic growth creation in cities and leads to economic diversity.

The latter observations exemplify only some of the basic challenges encountered by modern urban agglomerations. Clearly, there is multiplicity of such challenges, as argued extensively in the present paper. An integrated perspective on all such issues leads to a conceptual framing and viable specification of the research tasks ahead of us. This will be inserted in the concluding section.

The roadmap for a strategic research agenda

The *urban piazza* framework represents a tool that may help develop the research roadmap, which in turn may become a navigation instrument for the '*New Urban World*'. In this respect, the *urban piazza* offers a toolbox aimed at laying the foundations for a research programme for strategic urban issues that are of decisive importance for the survival of cities in the long-run in our world. It is intended to help isolate and identify in a more efficient way the strategic policy goals of advanced urban research and outline the way to get there. Our roadmap consists of three components: foundational requirements, construction reinforcements and areal connectivity.

Foundational requirements

The strongest and most solid constructions are built upon a well-prepared ground. For integrative urban research to take place, the foundation must be prepared. In this case, we emphasise the need not only for accurate and consistent definitions and terminology, but also for quantitative benchmarks. *First*, governments, researchers and other stakeholders need to re-evaluate and potentially re-imagine our definitions of cities and urban areas from a statistical, data-gathering perspective. This requires investigating whether existing definitions are outdated, as well as developing methods for harmonising measures over time

and space. Although not at the forefront of urban research, this preliminary work is fundamental. How can we assess urban connectivity if we have no idea what is connected to what and how? A *second* foundational consideration is the development of benchmarks, scorecards or report cards that capture the imagined elements of the *urban piazza* on a regular basis and allow for comparisons across time periods and areas. This urban monitoring, like teasing out statistical definitions, is both basic and fundamental, akin to monitoring deforestation in the Amazon or air quality in Beijing: until initial benchmarks have been calculated, it is difficult to know where we stand on many issues.

Construction reinforcements

An *urban piazza* that serves the here-and-now as well as subsequent generations must be built to withstand the ravages of time and the changing needs of its users. Cities comprise interconnected activities and hence an activity-oriented approach seems to be a logical consequence. Here we refer to the growing need for a systems approach in urban research. Every policy will have unintended consequences for other components in the system. There is a pressing need to connect modern technology with lifestyles and urban architecture. The ‘human factor’ needs to be a prominent feature in the development of our ‘urban century’. How do we begin to assess how environmental resilience, migration and human capital development are interrelated and dependent? Clearly, urban research in the future will be fraught with many – and sometimes unforeseen – challenges.

A real connectivity

Connectivity across areas of the *piazza* has both practical and metaphorical meaning. In the metaphorical sense, we suggest ongoing efforts towards encouraging communication across the various components of the *piazza*. Accessibility is obviously fundamental to urban economic development. How do the various aspects of accessibility interact with, for example, environmental resilience or the attraction of members of the creative class? Moreover, there is a clear need even in the present urban world for increased interaction between policymakers at the local, regional and national scale and the producers of academic research. Researchers would benefit from ‘urban labs’ that allow them to see the impact of actual policies (as well as the constraints faced from implementing said policies in the real world) and policymakers would surely value an infusion of new thoughts and ideas from other places and even other settings.

On the practical side, as we have argued, one critical aspect of the ‘*New Urban World*’ is the way in which it is the product of multi-scale, dynamic linkages of various sorts, whether social networks within a city or across an ethnic diaspora or measurable ‘hard’ networks that capture the interdependence of firms, neighbourhoods and urban areas. The challenge of defining and measuring new types of networks as they emerge is enormous, but will be important in helping researchers map the trajectory of *global* well-being, as well as *local* development.

Overall, the *urban piazza* provides the foundation for a more efficient approach to analysis of the current challenges and opportunities offered by the ‘*New Urban World*’. It offers a way for the development of consistent definitions and terminology and for the establishment

of clearly identifiable quantitative benchmarks. It also allows for the application of a systems approach to urban research, integrating issues related to the innovation and economic vitality of cities, small cities, logistics and connectivity, social capital and the ecological sustainability and quality of life of cities, which until recently have tended to feature independently from one another. In addition, the *urban piazza* framework promotes the implementation of multi-scale analysis, both considering socio-economic linkages within cities, as well as arm's length linkages across different cities and between cities and their surrounding rural areas. Hence, it establishes a framework for detecting new interactions and the emergence of different hierarchical and geographical arrangements. Consequently, the *urban piazza* is intended as a framework to overcome various prominent problems that beset urban studies today by providing a viable and original approach in order to undertake research initiatives on future urban issues in a constantly changing urban context, while focusing on the unique strengths and opportunities of strategic urban policy in our world with a long-term horizon.

'When a man rides a long time through wild regions he feels the desire for a city'

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Figure 1.

Percentage of the population in urban areas, 2011, 2030 and 2050.

Source: United Nations, Department of Economic and Social Affairs, Population Division: World Population Prospects DEMOBASE extract. 2011.

Figure 2.
The 'New Urban World' urban piazza framework.