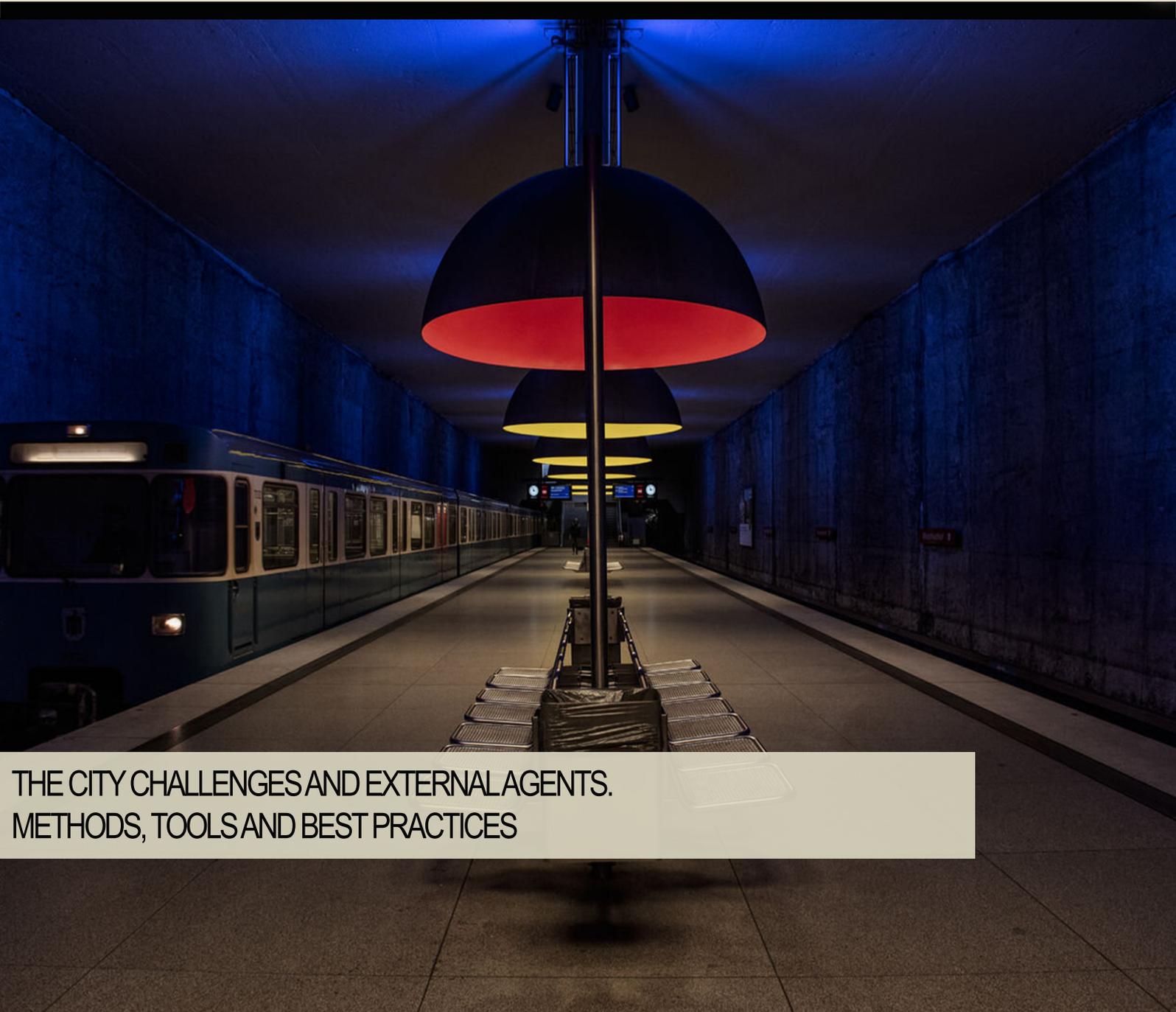


# TeMA

Journal of  
Land Use, Mobility and Environment

The Times They Are a-Changin' and cities have to face challenges which may not be further postponed. The three issues of the 13th volume will collect articles concerning the challenges that cities are going to face in the immediate future, providing readings and interpretations of these phenomena and, mostly, methods, tools, technics and innovative practices (climate proof cities, zero consumption cities, car free cities) oriented to gain and keep a new equilibrium between cities and new external agents.

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THE CITY CHALLENGES AND EXTERNAL AGENTS.  
METHODS, TOOLS AND BEST PRACTICES

## THE CITY CHALLENGES AND EXTERNAL AGENTS. METHODS, TOOLS AND BEST PRACTICES

2 (2020)

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With ANVUR resolution of April 2020, TeMA Journal and the articles published from 2016 are included in A category of scientific journals. From 2015, the articles published on TeMA are included in the Core Collection of Web of Science. TeMA Journal has also received the *Sparc Europe Seal for Open Access Journals* released by *Scholarly Publishing and Academic Resources Coalition* (SPARC Europe) and the *Directory of Open Access Journals* (DOAJ). TeMA is published under a Creative Commons Attribution 3.0 License and is blind peer reviewed at least by two referees selected among high-profile scientists. TeMA has been published since 2007 and is indexed in the main bibliographical databases and it is present in the catalogues of hundreds of academic and research libraries worldwide.

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# TeMA

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Land Use, Mobility and Environment

## THE CITY CHALLENGES AND EXTERNAL AGENTS. METHODS, TOOLS AND BEST PRACTICES

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## REVIEW NOTES

The quality of the offer that the magazine has set as a priority since its foundation has given increasingly encouraging results, first with the recognition by readers and, subsequently, by the institutional bodies responsible for the quality of research in Italy. The recent inclusion of TeMA in the list of reviews of A class represents a milestone to start from. The Review Pages section, since the first issue of TeMA in 2007, has played a substantial role in the general balance of the review, both as an expression of constant updating and as a permanent observatory on emerging issues relating to the relationships between urban planning, mobility and the environment. Starting from the issue of August 2020, the Review Pages will have the new form of Review Notes. They will become short scientific articles, which, while maintaining the function of a reasoned review, will deepen relevant issues in the context of the scientific debate on the recent challenges of the cities, territories and environment. The Review Notes will contain critical thoughts congruent with the topic of the review. The guidelines for these considerations will be: centrality and interest in the scientific debate; advancements and innovativeness of topics; significant gaps resulting from the analysis of the state of the art; recent evidence stemming from the scientific debate; perspectives and potential developments. The Review Notes will consist of four sections, edited by the following researchers:

- Carmen Guida for the section Urban Planning Literature Review;
- Federica Gaglione for the section Town Planning International Rules and Legislation Overview;
- Gennaro Angiello for the section Projects and Innovative Approach;
- Stefano Franco for the section Economy, Business and Land Use.

Researchers can identify a specific and personal topic to deepen in more than one issue, becoming self-contained scientific articles. Articles are subjected to the usual submission process required by the statement of TeMA journal. The Editorial Staff provides a specific quality control of the articles.

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## REVIEW NOTES – Economy, business and land use

### Entrepreneurship in the city: the digitalization

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#### Abstract

Starting from the relationship between urban planning and mobility management, TeMA has gradually expanded the view of the covered topics, always following a rigorous scientific in-depth analysis. This section of the Journal, Review Notes, is the expression of a continuous updating of emerging topics concerning relationships among urban planning, mobility and environment, through a collection of short scientific papers. The Review Notes are made of four parts. Each section examines a specific aspect of the broader information storage within the main interests of TeMA Journal. In particular, the Economy, business and land use section aims at presenting recent advancements on relevant topics that underlie socio-economic relationships between firms and territories. The present note underlines the benefits that entrepreneurship exerts on the city, with a specific focus on the digitalization.

#### Keywords

Digitalization; Entrepreneurship; City.

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## 1. Introduction

Entrepreneurship is among the economic measures that determines the growth and wellbeing of a city (Glaeser & Kerr, 2010). Cities that offer the best conditions for firms to grow up or that ease the birth of new entrepreneurial activities, increase the number of jobs they offer, in turn enhancing citizens' wellbeing and budget (Lee & Rodríguez-Pose, 2020; Lee, 2017). With a study based on US cities, Lee (2017) recently found that a 10% increase in new birth of small businesses increases urban employment by 1.3-2.2% and wages by 1.2-2.0%. In addition, such virtuous path increases the attractiveness of the city for talents and new investments. In other words, creating the best conditions for entrepreneurs to invest and implement their business ideas, is an important mean for cities to grow up from an economic and a social perspective (Fritsch & Noseleit, 2013). A recent example of the importance that entrepreneurship has for cities is provided by the Brexit. Several start-ups are planning to leave UK – one of the most attractive countries for new ventures - if Brexit conditions will penalize them. Accordingly, many European cities like Berlin, Lisbon, Amsterdam and Dublin are designing strategies to host such a plethora of businesses (The Guardian, 2017).

At the same time, the entrepreneurial commitment of a city also depends on the implementation of activities aimed at transforming the systems that control government efficiency and effectiveness (Bernier & Hafsi, 2007). For example, transparent administration or Open Data strategies can be considered as forms of public entrepreneurship (Bernier & Hafsi, 2007).

Established literature on the topic argues that the entrepreneurial vocation of a territory may depend on market or institutional factors. As far as market is concerned, small independent firms enhance the entrepreneurial capability of a city or a region by lowering the costs of entry through the development of independent suppliers and by creating an entrepreneurial culture (Glaeser & Kerr, 2010; Saxenian, 1990). In an institutional perspective, the entrepreneurial activity may be influenced by the level of education, cost advantages, infrastructures, climate and accessibility (Glaeser & Kerr, 2010). These factors largely depend on the intervention of governs and policymakers. Recently, Lee & Rodríguez-Pose (2020) also found that entrepreneurship – in firms belonging to tradeable sectors - is a mean to reduce poverty in cities, increasing incomes for non-entrepreneurs. However, this positive effect depends on the productivity and innovation levels reached by the businesses (Baumol & Strom, 2007) that are also affected by territorial capital (Castelnovo et al., 2020; Geissinger et al., 2019), and on companies' ability to correctly embrace technological challenges. Among these, the digitalization is one of the most relevant issues that companies and societies need to face, and providing successful digital services may help business to grow and cities to develop new competences while benefiting citizens' life. That said, this review note, aims at describing what are the possible advantages for cities in favoring the spread of digital services both attracting digital companies and implementing e-governance strategies. In the next pages of this short article, I will briefly underline the relevance of the digital entrepreneurship in the city and different possibilities that cities have in order to implement a digital strategy. Finally, I will draft concluding considerations about Italian digital strategies and how are Italian cities responding to the challenge of the digital transformation.

### 1.2 Digital entrepreneurship in the city

Entrepreneurship represents a way through which cities can increase their resilience to economic and natural shocks (Errigo, 2018; Molavi, 2018; Williams & Vorley, 2014). This aspect assumed great relevance in recent years, since economy has been affected by two enormous shocks in the last 15 years with the 2008 financial crisis and the recent Covid-19 pandemic. In particular, firms characterized by flexibility, that are able to adapt to changing contexts, are the ones that are more prepared to external shocks, in turn enhancing the capability of the city to respond to economic downturns. Small and flexible firms such as startups, are also the ones that typically implement technological and organizational innovations, developing competences that trigger adaptive behaviors (Pinelli et al., 2020). The recent Covid-19 pandemic, for example, has shown that digital

skills are fundamental to maintain high levels of productivity allowing people to work even far from their usual offices and job places. In addition, digital industries are characterized by strong interconnections between businesses that favor the growth of the entire system exploiting a network effect (Losurdo et al., 2019). This aspect is particularly relevant, for example, in the service industries that traditionally determines the economic systems in large urban centers. Thus, given the aforementioned importance that digital firms may have in the economic, cities that promote digital entrepreneurial strategies can exploit the relative benefits (Komninos et al., 2019): increase employment, productivity, wellbeing, resilience and technological readiness to future challenges. Cities can enhance their digital capabilities in two ways that are not mutually exclusive. Rather, they should both be implemented to develop a proper digital strategy: from one side cities can develop strategies to attract and maintain digital companies, from the other they can embed digital facilities in the public administration, offering digital services to citizens. In the latter case, research has extensively argued about the advantages of implementing digital technologies in public administrations, that enhance transparency and engagement while reducing administrative costs (Young, 2020). Cities promote the diffusion of digital technologies also for mitigating climate risks, for example through the implementation of shared mobility measures aimed at improving air quality and reduce congestion (Bai et al., 2018; Creutzig et al., 2019; Rolnick et al., 2019).

On the other side, cities may increase their attractiveness towards digital firms by attracting venture capital and skilled labor that find the best conditions to grow in a dense and interconnected urban context (Geissinger et al., 2019). In addition to the several advantages previously discussed, such a context also offers to the city the possibility to positively react to new technological shocks by easily internalizing new developments in digital technologies.

## 2. Digitalization in Italy

With particular reference to Italy, the national strategy aimed at implementing the digital transformation is based on two pillars: transparent administration and diffusion of digital technologies in firms. In practical terms, the aim is to promote the diffusion of robotics, artificial intelligence, cyber security systems – and other industry 4.0 technologies - in companies, and to implement e-governance strategies. Going in depth in the analysis of the most digitalized Italian cities it is possible to state that their main commitment regards e-governance measures. In their plans, indeed, Italian cities hardly mention actions aimed at attracting new digital firms. According to the recent I-City Rank 2019 (ForumPA, 2019), Florence, Bologna and Milan are the most performing cities in terms of digitalization. In the following boxes we will deepen the main activities implemented by these three cities that represent the more advanced cases of digitalization of Italian cities. In details, Italian cities appear to push a lot on e-governance and social inclusion, with measures aimed at involving local stakeholders in decision-making processes. Another very sensible aspect for Italian cities is that of open data and transparent administration that eases the relationship between citizens and firms and the public administration. On the other side, Italian cities show a lack of strategies aimed at attracting digital entrepreneurs. Such a weak commitment is limiting for Italian territories that can hardly exploit benefits coming from the diffusion of digital firms in their urban centers. To this end, Italian policymakers should be aware of the fact that, while they appear to be moving in the right way in terms of public entrepreneurship and e-governance measures, urban digital strategies should still do a lot more in terms of creating conditions for digital companies to born and prosper.

### Digitalization in Florence



Florence is one of the Italian cities that supports firms towards the digital transformation through education and consultancy activities. The aim of such program is to bring local businesses closer to the industry 4.0 paradigm. In addition, the local chamber of commerce provides financial supports to local firms through the grant of vouchers. The city of Florence also supports local businesses with lectures and seminars about digital marketing provided in partnership with Google. Such partnership also has the ambitious goal of educating the so-called NEET (Not-engaged in Education, Employment or Training), in turn performing a social utility function. Florence also offers to local entrepreneurs the access to the Fintech Digital Index – a database that provides information about the most advanced digital companies in the country on topics like blockchain, big data and analytics.

### Digitalization in Bologna



Bologna is among the Italian cities that adopted a digital agenda planning their digital transformation since 2011. In the 2016-2020 digital plan, the city of Bologna mainly prioritizes interventions aimed at improving services to citizens: enhancing free wireless, spreading the broadband, improving digital communication with firms and citizens that allow them to participate to decisions, simplifying online services, implementing data-driven decision-making. So, Bologna is giving priority to the participative administration and to its relationship with local stakeholders. This aspect is also remarked by the fact that the Digital Agenda has been developed through the involvement of several stakeholders.

### Digitalization in Milan



Milan is among the few cities in Italy that has established a department for the digital transformation. The main commitment of Milan towards the digital transformation refers to the Open Data strategy. For example, Milan administration provides an open access platform that allows to manage and share in an integrated way, through technical maps, all the geographic data held by the Municipality of Milan, allowing an agile and streamlined publication of spatial data in an open format. In addition, Milan has improved some functions offered through online channels to ease citizens' access to specific services such as building and events.

## References

- Bai, X., Dawson, R. J., Ürge-Vorsatz, D., Delgado, G. C., Barau, A. S., Dhakal, S., ... Schultz, S. (2018). Six research priorities for cities. *Nature*, *555*, 23–25. <https://doi.org/10.1038/d41586-018-02409-z>
- Baumol, W. J., & Strom, R. J. (2007). Entrepreneurship and economic growth. *Strategic Entrepreneurship Journal*, *1*(3), 233–237. <https://doi.org/10.1002/sej.26>
- Bernier, L., & Hafsi, T. (2007). The Changing Nature of Public Entrepreneurship. *Public Administration Review*, *67*(3), 488–503. <https://doi.org/10.1111/j.1540-6210.2007.00731.x>
- Castelnovo, P., Morretta, V., & Vecchi, M. (2020). Regional disparities and industrial structure: territorial capital and productivity in Italian firms. *Regional Studies*, *54*(0), 1–15. <https://doi.org/10.1080/00343404.2020.1763941>
- Creutzig, F., Franzen, M., Moeckel, R., Heinrichs, D., Nagel, K., Nieland, S., & Weisz, H. (2019). Leveraging digitalization for sustainability in urban transport. *Global Sustainability*, *2*, 1–6. <https://doi.org/10.1017/sus.2019.11>
- Errigo, M. F. (2018). The Adapting City: Resilience Through Water Design in Rotterdam. *TeMA, Journal of Land Use, Mobility and Environment*, *11*(1), 51–64. <https://doi.org/10.6092/1970-9870/5402>
- ForumPA. (2019). *I-City Rank 2019*. <https://doi.org/10.1017/CBO9781107415324.004>
- Fritsch, M., & Noseleit, F. (2013). Investigating the anatomy of the employment effect of new business formation. *Cambridge Journal of Economics*, *37*(2), 349–377. <https://doi.org/10.1093/cje/bes030>
- Geissinger, A., Laurell, C., Sandström, C., Eriksson, K., & Nykvist, R. (2019). Digital entrepreneurship and field conditions for institutional change— Investigating the enabling role of cities. *Technological Forecasting and Social Change*,

146(November 2017), 877–886. <https://doi.org/10.1016/j.techfore.2018.06.019>

Glaeser, E., & Kerr, W. (2010). What Makes a City Entrepreneurial? *Harvard University Policy Briefs*, (272786). Retrieved from [http://isites.harvard.edu/fs/docs/icb.topic1188431.files/Class 14 Mar 26/GSD5421 Glaeser Entrepreneurial Cities.pdf](http://isites.harvard.edu/fs/docs/icb.topic1188431.files/Class%2014%20Mar%2026/GSD5421%20Glaeser%20Entrepreneurial%20Cities.pdf)

Kominos, N., Kakderi, C., Panori, A., & Tsarchopoulos, P. (2019). Smart City Planning from an Evolutionary Perspective. *Journal of Urban Technology*, 26(2), 3–20. <https://doi.org/10.1080/10630732.2018.1485368>

Lee, N., & Rodríguez-Pose, A. (2020). Entrepreneurship and the fight against poverty in US cities. *Environment and Planning A*, 4(0), 1–22. <https://doi.org/10.1177/0308518X20924422>

Lee, Y. S. (2017). Entrepreneurship, small businesses and economic growth in cities. *Journal of Economic Geography*. <https://doi.org/10.1093/jeg/lbw021>

Losurdo, F., Marra, A., Cassetta, E., Monarca, U., Dileo, I., & Carlei, V. (2019). Emerging specializations, competences and firms' proximity in digital industries: The case of London. *Papers in Regional Science*, 98(2), 737–753. <https://doi.org/10.1111/pirs.12376>

Molavi, M. (2018). Measuring Urban Resilience to Natural Hazards. *TeMA, Journal of Land Use, Mobility and Environment*, 11(2), 195–212. <https://doi.org/10.6092/1970-9870/5485>

Pinelli, M., Cappa, F., Franco, S., Peruffo, E., & Oriani, R. (2020). Too Much of Two Good Things: Effects of Founders' Educational Level and Heterogeneity on Start-Up Funds Raised. *IEEE Transactions on Engineering Management*, In press. <https://doi.org/10.1109/TEM.2020.2991607>

Rolnick, D., Donti, P. L., Kaack, L. H., Kochanski, K., Lacoste, A., Sankaran, K., ... Bengio, Y. (2019). Tackling Climate Change with Machine Learning. *ArXiv Preprint*. Retrieved from <http://arxiv.org/abs/1906.05433>

Saxenian, A. (1990). Regional networks and the resurgence of Silicon Valley. *California Management Review*, 33(1), 89–112. <https://doi.org/10.2307/41166640>

The Guardian. (2017). European cities hope to attract UK entrepreneurs after Brexit vote.

Williams, N., & Vorley, T. (2014). Economic resilience and entrepreneurship: Lessons from the Sheffield City Region. *Entrepreneurship and Regional Development*, Vol. 26, pp. 257–281. <https://doi.org/10.1080/08985626.2014.894129>

Young, M. M. (2020). Implementation of Digital-Era Governance: The Case of Open Data in U.S. Cities. *Public Administration Review*, 80, 305–315. <https://doi.org/10.1111/puar.13156>

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