The Maker Faire of Rome as a window of observation on the new perspectives for local economic development and the new urban entrepreneurial ecosystems.

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Abstract

The rise of the Maker Movement – representing small businesses active in the digital fabrication and the creative industry field – is indicative of the emergence of a new type of urban economy and labour regulations in many cities. Trade fairs have been central to the dynamics of these makers as well as an institutional tool to build an economic reputation for the place hosting them. This paper draws upon a survey of exhibitors at, and interviews with organizers of, the Maker Faire of Rome 2015 to describe the features of this unfolding entrepreneurial world. The findings indicate that, although cities are once again the nexus of contemporary innovation

trends, these are deeply intertwined with the surrounding socio-political context. Specifically, and in some contrast to the extant literature on creativity, the Rome case indicates the salience of Makers to those urban economies most in need of regeneration.

Key words: makers, trade fairs, urban economies, cities, entrepreneurs.

Introduction

New types of activities and a new wave of entrepreneurialism have emerged from the economic downturns and industrial restructuring in Western economies. Increasingly, digital technologies blend with creative businesses – the prime example being the Maker Movement. The debate concerning entrepreneurial ecosystems and creativity as a new source of economic growth has derived from several bodies of literature. While studies focusing on the definition of the creative industry (Markusen et al., 2008; Scott, 2010) or on its implications for contemporary industrialization (Boggs, 2009), urbanization and regeneration processes (Hutton, 2015) have been widely explored; a whole new discussion emerges around the related new professional figures and its geography. Cities and urban areas are mainly celebrated by the contemporary literature for their capability to attract human capital and for their cross-sectorial labour pool (Glaeser, 2011; Storper and Scott, 2009). However, there is still a gap in literature in addressing the link between urban cores' renaissance and its generation of new entrepreneurs, with regards over the role played by institutions in this process of economic activities' creation.

This paper investigates the Maker Movement in Rome as a valuable window to understand the new perspectives for local economic development and the way governance's tools should be re-shaped drawing upon technology, creativity and the renewal of traditional crafts. Makers – or the new digital artisans – are now promoting a more democratic type of industrialization (Dougherty, 2012). This productive chain combines new open-source technologies and machineries with classical techniques, in order to achieve innovative and customized handmade goods (Anderson, 2012). Directly connected is a new type of institutional and governmental support, mostly evident in the organization of major dedicated events to encourage innovation and entrepreneurship in urban centres, which has been barely addressed by literature.

The current investigation draws upon a case study of the Maker Faire of Rome, the largest outside of the USA. The main goal motivating the study was to understand the implications of the establishment of such an event in Rome testing its correspondence to the emergence of a new entrepreneurial ecosystem and its institutional promotion. A survey undertaken with the individual enterprises exhibiting at the 2015 event, together with a set of interviews with the organizers of the event and the key actors involved in the promotion of new businesses in Rome sought to describe the new urban entrepreneurial trends. This scoping study has been divided into three main key points answering some associated research questions. First, what are the occupational and industrial characteristics of the population of makers? Second, and building upon this, what is the geography of the Maker Movement and which role is played by temporary

clusters such as the Maker Faire? Finally, focussing on the Roman situation, the article discusses the relationship between institutions and the emergence of the Maker Movement; or in other words, the embeddedness of these new entrepreneurs in the surrounding context.

The urban dimension of these findings confirms that despite its digital features and applications which might be thought to favour locational dispersal, professional linkages and products testing are still built through trusted face-to-face contacts (cf. Jacobs, 1961; Glaeser, 2011; Storper and Venables, 2004). Moreover, the urban dimension of the phenomenon suggests that makers are one facet of broader changes in urban labour markets. The former involves the likes of freelancing, which also reshape the characteristics of working spaces, professional and industrial development. Finally, it is important to note the salience of the Maker Movement, in cities such as Rome seeking a new vocation after significant economic retrenchment. Therefore, the final section of this paper is dedicated to the relationship between Maker Movement and the local institutional framework. The picture that emerges in this new urban economy is, unsurprisingly, a complex one involving elements of grassroots and top-down mobilisation among entrepreneurs and the public sector.

The Maker Movement: a window on the development of a new urban economy

Defining makers and exploring the new entrepreneurial dynamics

The Maker Movement has its roots in the United States in the San Francisco Bay area starting with the launch of the first issue of *Make* magazine by Dale Dougherty in January 2005. The periodical was born to give exposure to a group of Do It Yourself (DIY) enthusiasts in the field of digital fabrication: hobbyists and a small portion of professionals – mainly free-lancers or entrepreneurs - who shared a passion for *making things* while experimenting with new machineries. This was followed the year after by the organization of the first Maker Faire in San Mateo: an event gathering the members of this community to share ideas and prototypes. Given its success it became a reproducible branded event. The community has then grown to have a global presence. Though in Europe, makers embody the peculiarities on a new emerging entrepreneurial class where creativity, technology and innovation are blending - being characterized by low barriers to entry and being strongly embedded in social networks (Gertner and Mack 2017; Lange and Bürkner 2017).

Anderson (2012) provided an explanatory excursus of the rise of Makers by defining the entrance of high-technology activities within the manufacturing sector as 'the new industrial revolution'. Over the last decade, laser cutter and 3D printers entered the productive chain of some traditional making professions, opening to new perspectives in the debate on local economic development (van Holm, 2017) in ways that are reminiscent of earlier debates

regarding a second industrial divide (Piore and Sabel, 1984) subverting the traditional dynamics of manufacturing. Makers originated a debate over the industry 4.0 and the possibilities offered by additive manufacturing (Conner et al., 2014; Lasi et al., 2014). Makers' creations could be as unique as that of traditional crafts, but they are produced by new technological means that require new and significant skills in software coding, design and with information and communication technologies. This might profoundly change the productive chain of selected goods allowing customization and a whole new world of perspectives in the craft of prototypes as well as the use of new materials (Birtchnell and Urry, 2016). Their bottom-up emergence and the extensive use of online forums to share and exchange technologies that are easily accessible to all, established a parallelism between the Maker Movement and other grassroots movements for innovation, either social or technological (Smith et al., 2016).

Characterized by low initial capital requirements but high risks of entrepreneurship these activities share some common features in the way they are usually set up and structured. While the implications of digital fabrication techniques for the labour market are still under researched, literature has begun to be more engaged in the analysis of their working spaces: the typical maker space is a *fab-lab*, equipped with the essential kit of machines which are shared by other users, cutting the cost of buying tools and allowing for further experimentation without wasting resource (Lange and Bürkner, 2018; Roma et al., 2017). If the initial choice of a Shared Serviced Office Space (SSOS) is a matter of affordability (Ferm, 2014) as a reaction to the general downturn, we should not underestimate the social value of these spaces (Merkel, 2015; Schmidt

and Brinks, 2017). Makers could work remotely, though they appear to prefer the networking and trust-building opportunities provided by co-working spaces (Spinuzzi, 2012). The current literature acknowledges the role held by those spaces allowing the activation of important learning processes (Sheridan et al., 2014) but also the cross-fertilization of "global pipelines of knowledge" and local innovation dynamics offered by their social proximity (Capdevila 2014). On the wider urban scale, temporary clusters like the Maker Faire provide some of the additional knowledge spillovers connecting those small hubs to the global scene in a constraint period of time (Bathelt and Turi, 2011).

Urban agglomerations, and the role of temporary clusters

As a recent phenomenon, the investigations of makers' as entrepreneurial drivers and the wider geographical implications of their locational preferences are still quite limited. As the previous section has highlighted, existing studies have looked at these working spaces mainly implying an urban environment as a settlement (e.g. Capdevila, 2014; Schmidt et al., 2015) but only very few for now, are approaching the related issue of quantifying or describing the effects on the urban economy (Wolf-Powers et al., 2016) or local development (van Holm, 2017).

At first glance this new entrepreneurial group might be interpreted with recourse to familiar ideas regarding urban economic agglomeration - albeit these have been recast in terms of the emergence of cultural and creative industries (Hall, 2000; Markusen et al., 2008; Scott, 2010).

However, these ideas have had little or no regard to technology and digital customization techniques as represented by makers, and still fail in tracking or categorizing the emergent urban economy and its entrepreneurial ecosystem. On the other side, literature positing the renaissance of cities as catalysts of talent (Glaeser, 2011) and skilled human capital (Storper and Scott, 2009; Florida, 2002) or highlighting the knowledge *spillovers* allowed by the urban environment (Storper and Venables, 2004) is extensive.

In the specific case of urban and economic geography (e.g. Pratt, 2008; Duranton and Puga, 2001), literature has tended to revive classical ideas from Jacobs (1969) and Hoover and Vernon (1959) celebrating cities as attractors for new activities. More recently though, cities have also been identified as the ultimate engine to fix 'broken' national economies (Katz and Bradley, 2013). Here I note that these ideas are valuable only if integrated with an appreciation of the subtly altered urban context of social and political transformations (Bathelt and Boggs, 2003), new technologies and forms of communication that influence contemporary professional habits and locational preferences of entrepreneurs (Nascimento and Polvora, 2016; Capdevila, 2014). Despite the promise of innovative technologies, sociability and physical contacts remain important for the exchange of information and knowledge (cf. Foord, 2013: p.5; on 'noisy networks'). The investigation of the Maker Movement would grant a broader understanding of how the contemporary urban economy is changing at the junction between physical and digital networks.

Especially when we deal with rising economic sectors it is in *temporary clusters*, such as fairs and other similar events, that network establishments and knowledge *spillovers* are accelerated, by recreating the same positive conditions found in the industrial district model (cf. Marshall, 1920). Bathelt and Turi (2011) discussed the necessity for new activities of both an international network - virtual based thanks to the high-speed of digital technologies - and a local scale interaction based on social embeddedness. The former network is useful to test the market response but it needs to be continuously enriched and updated by the comparison with the global scale. Similarly, Bathelt et al. (2004) argued that the 'global-pipelines of trans-national linkages', together with the local buzz, are vital to build a stronger innovative cluster. In these sorts of events social proximity replaces the spatial one of the traditional specialized districts.

Others draw attention to the way these events are globally connected and reproduced on a cyclical basis to let fairs effectively enter the business cycle of a certain place (Power and Jansson 2008). Bathelt and Boggs (2003) state that a rupture in the usual political or economic path in a certain area could nurture the emergence of new types of economies or a shift in the local economic geography. Finally, Anand and Watson (2004) refer to recurrent events as an economic resource producing benefits to the place hosting them and the dedicated sector, other than creating new jobs also for the organizational functions. Thus, it can be argued that in lagging regions the establishment and the public promotion of a series of cyclical events in one field - as in the case of Maker Faire of Rome, highly supported by the regional institutions - might be a signal of a general will to establish a new reputation in a new sector.

Obvious analogies could be found in the analysed case study of the Maker Faire with its annual recurrence and its presence in many countries. These events are conceived to help the formation of a network of Makers, in a place where at least for a few days both 'local and global pipelines' could interact faster than usual. Featured versions of the Maker Faire take place in major cities, characterized by sponsorships from multinational companies and funding from the public sector depending from the host country. The city of Rome hosts 'the European Edition' (as labelled by the organizers): the biggest fair outside of the USA. The specific case of the Italian capital city, with its current socio-political and economic struggles offers ground to test the role of temporary clusters in the economic relocation towards a new entrepreneurial sector. Here and in the next sections, I intend to underline how fairs are primarily a useful tool for business institutions to build a reputation for a certain location and its related economic specialization**.**

The role of institutions: cause, effect or synergies of a (temporary) cluster

Makers represent a story of increasing free-lancing, and lower social security but growing institutional support towards entrepreneurial ventures as a trigger of new economic growth and development. In this framework, major international events become an essential institutional tool for place-branding (Ashworth, 2009). Events such as the Maker Faire are no exception and ultimately they disclose an increasingly neo-liberal institutional approach to the labour market (Rossi, 2017).

The exhibition of entrepreneurs and new activities as engine of the new urban economy has therefore converged into a broader debate questioning the evolution of capitalism. Rossi and Di Bella (2017: p.2) labelled 'start-up urbanism' the promotion of 'socially interactive digital technologies' and 'technological start-up companies' as 'engines of capitalist recovery and innovation', enlarging what Scott (2014) had labelled as 'cognitive cultural capitalism'. The result sees relevant business institutions involved in selling 'a new "happiness industry" […] reviving capitalism's promise of happiness in a general context of economic shrinkage' (Rossi and Di Bella, 2017: p.2).

The influence of the socio-political dimension in granting entrepreneurial support becomes more evident if we notice the consequences imposed by the general downturn on the European economy and the labour market. Freelancing has emerged as a very popular type of job regulation. In Italy, 19 % among the total of working population is registered as self-employed, being only second to Greece (22 %) in the EU zone (Eurostat, 2016). Even if we look at others figures such as the youth unemployment rate – 12% (ISTAT, 2016)- the share of temporary jobs – 14% - or the portion of undeclared work – 13% - the picture is not different (ISTAT, 2015). The State is not anymore able to provide an adequate social security; permanent contracts have become a mirage for people entering the labour market. Therefore, the rocketing diffusion of this start-up culture moves forward with the promotion of a new entrepreneurialism for a new

economic growth among the various governmental institutions of traditional capitalist countries.

If we look at the Italian case, almost contemporary to the first Roman Maker Faire in 2013, a special register of '*innovative start-ups'* was established - Law 179/2012 - giving fiscal benefits to innovative young firms. Similarly, the EU is promoting a number of initiatives to support start-ups and some related place-based policy agendas – i.e. the RIS3 - for 'a smart, sustainable and inclusive economy' (EU Commission, 2014). These measures should grant funding to regions active in supporting entrepreneurialism. The Lazio region of Rome has adopted these guidelines as key objectives of its policy agenda for innovation and economic growth. In this complex economic and political context, a neo-liberal approach to job formation has seen the fair emerge as a tool to stimulate the birth of a new cluster (cf. Ramírez-Pasillas, 2008), where the democratization of the industrialization promoted by the Maker Movement accelerates the process by granting an easy access to the labour pool.

In this final section, we have explored the role of major events in establishing economic activities. Discussions on the traditional dynamics of agglomeration and cluster creation – even if temporary – contain important circularities (Phelps, 1992) and ultimately they demand a questioning the role played by institutions (Amin and Thrift, 1995; Rodríguez-Pose, 2013; Tomaney, 2014). Though the increasing rates of freelancing, the decline of the traditional district model (De Marchi and Grandinetti, 2014) and the support given to new entrepreneurial clusters

also have recalled the traditional idea of 'creative destruction' from Schumpeter (1942). The evolutionary view of capitalism foregrounds the role that institutions might (Mazzucato, 2013) or might not have (Mason, 2015) in the processes of innovation, creation and economic growth.

The new urban economy represented by makers leaves open a debate questioning top-down interventions as a way to galvanise bottom-up phenomena (institutions as cause) or whether they are largely unnecessary and even counterproductive (institutions as effect). The data collected and here presented, intend to place cities like Rome – suffering from socio-political fragmentation - in this debate. In such a fragmented framework, the role that instructions might have in transforming an innovative potential in effective economic growth becomes crucial: a synergic and systemic institutional measure and tailored governance tools could make a stark difference in the effective establishment of an organized entrepreneurial ecosystem in Rome, out of some bottom-up processes.

Research methods

Detailed research on makers, specifically assessing the role of temporary clusters such as the Makers Faire of Rome (Bathelt et al., 2004) is still in its infancy. So far, literature has more extensively explored the social implications of the movement in its democratization of manufacturing and innovation (Hatch, 2013; Dougherty, 2012) as well as the social and managerial implications of their working spaces (Schmidt and Brinks, 2017; Merkel 2015;

Capdevila 2014). While a literature gap has been identified in connecting the emergence of such entrepreneurial ecosystem with wider economic implications for the surrounding context (cf. van Holm, 2017). The following qualitative analysis intends therefore to provide a descriptive account of the entrepreneurial features of makers, placing them in their geography, identifying the role of major events in such ecosystem while providing empirical ground for future researches.

The investigation was undertaken in Rome, drawing upon the results of a survey undertaken at the third edition of the Maker Faire of Rome in October 2015. As the institutional influence in the organization of the fair was particularly relevant in the Roman context, these data were complemented by the information gathered through the set of 10 semi-structured interviews conducted between May and July 2016 among the key actors involved in the organization of the fair; those included makers, fab-lab providers (both private and public) and institutional organizers of the fair (e.g. the Lazio region and other regional line agencies such as BIC Lazio; Asset Camera from the Chamber of Commerce; or the trade association for craft and SMEs of Rome: CNA Roma). Interviews, fully recorded and transcribed, have been led in Italian and followed by a thematic analysis that helped releasing additional qualitative contents and primary data on the characteristics and social connections of the Roman Maker Movement. The so released material specifically supported the third query of this paper investigating the role and type of support offered to the ecosystem by the Roman institutions.

The survey was directed to the individual stall renters and provides evidence that mostly speaks to the first two research questions regarding the characteristics, locational preferences and the benefits sought by makers when exhibiting at the Maker Faire 2015. Findings demonstrated a clear urban settlement, mainly due to the cross-sectorial approach followed by such professionals and their necessity of building networks in the trial stage of their activities. Out of almost 200, 90 completed questionnaires were collected, representing a response rate of 45%. The majority of the surveyed exhibitors were Italians (62%) with the most represented city being Rome with 17% of the share. Twenty of these questionnaires were accompanied by extended informal conversations. The first hypothesis to test here was the entrepreneurial capacity of such an event. The material resulting from transcribing, coding and undertaking a thematic analysis of these conversations answered my third research question questioning the role played by institutions in the support of the event and the related entrepreneurial ecosystem. All interviews were carried out in the interviewees' working spaces with extensive field-notes taking, which helped to add some descriptive features to the narrative and to contextualize the phenomenon.

The first signal of institutional and political *embeddedness* for the Maker Faire of Rome in 2015 was the choice of the location, which was intentionally chosen with a view to establish the event in the city's annual calendar, marking out the city as a promoter for new enterprises' development and the placement of young professionals. Placing the fair in the oldest educational institution of Rome – the University of '*La Sapienza*' - in the very centre of the city

was a clear and strategic political choice to establish a connection between the university and the innovative entrepreneurial world through the fair.

A total of 250 stalls were distributed in 23 temporary pavilions throughout the courtyard area of the campus with further stages and conference rooms arranged for the various showcases and educational or children entertainment. The various pavilions were organized thematically around themes such as fashion, robotics or interior design. Other than these, were the stalls owned by the sponsors and the main partner institutions, or hospitality brands. The sponsors' stalls were excluded from the survey since these multinational corporations were not representative of the small entrepreneurial sector I wished to investigate. Given the more than 100.000 visitors of the 2015 edition, the 2016 edition has been moved to the much bigger trade fair centre "Fiera di Roma", featuring an exhibition space three times bigger, despite its less central location. Given the relevance of the Roman edition, with no equals in Europe, the Roman organizers were also invited in 2016 to set up the First Ever EU edition of the Maker Faire featured by the European Parliament in Brussels.

TIPE OF ACTIVITY	
Electrical, mechanical and robotics prototyping	28%
Fashion, architecture and design	22%
Cultural industry, educational, video, photo	21%
Materials/components/machine expo	13%
Sharing economy	6%
Software, online services	6%

Health			3%
Environment and sustainability			2%
BUSINESS INFORMATIONS		**GEOGRAPHY**	
Category		**Location**	
Non – professional	9%	City centre or inner suburbs	72%
Professionals	82%	Outer suburbs	18%
NGOs	9%	Further outside/industrial zones	9%
Business Age		**Typology of premises**	
1 year or less	5%	Shared service accommodation	43%
2 to 5 years	70%	Office space rented solely for that business	27%
Until 10 years	8%	Home (online based business)	21%
Older	17%	University or similar	8%
Size - Number of people working in the business		**Reasons for the choice**	
1	24%	Logistic, transport/infrastructure proximity	30%
Up to 5	48%	Affordability/availability	29%
Up to 10	13%	Spatial proximity with facilities or other activities	24%
Up to 50	11%	Social proximity (network, agglomeration)	10%
More than 50	4%	Exposure/centrality/branding	7%

Table 1: Characteristics of the makers firms surveyed in Rome in 2015 displaying the roots of an emerging labour market. Particularly evident is the cross-sectorial representation of activities that mirrors the innovative features of this new urban economy. The right side of the table reports the locational choices of makers.

Defining the seeds of a new urban economy – makers and beyond

This section presents data on the basic characteristics of the firms exhibiting at the fair; it is meant to answer the first research question delivering an occupational and industrial identikit of makers. Table 1 presents a summary of the reported key features suggesting the emergence

of a new entrepreneurial sector. 82% of surveyed declaring to be a professional. As seen from the choice of the venue, the fair is conceived to promote a nexus of 'professionalism' between university education and the new urban economy. Almost half of the companies are very young indeed, having started their business within the last 2 years. Moreover, the typical business size is micro or small. Four out of five of the surveyed firms have up to 10 employees. Among these, many declared that they were spin-offs of other existing businesses using the original premises to save funds while testing the new business model.

These demographics confirm the native purpose of the fair to launch innovation and to give exposure to prototypes or new businesses proposals, as confirmed by the interviewed organizers of the event. Very important to underline is the economically struggling context in which the Italian (and European) edition of the Maker Faire sits. Widening the picture, Italy which historically has a strong tradition of SMEs has nevertheless seen the average firm size shrink to just four employees (ISTAT, 2016) and this tendency has affected also successful *mileux* such as that of the industrial districts from the Third Italy (De Marchi and Grandinetti, 2014). Therefore, if we consider makers in the wider economic context, the use of such international events as a tool to promote the restart of the economy and supporting entrepreneurialism appears even more evident (cf. Schumpeter, 1942).

The economic activities represented at the Maker Faire show how diverse the set of firms and professionals populating this emergent entrepreneurial world actually is. This touches upon the

traditional activities of the cultural and creative industries with an added flavour of more technological activities that includes prototyping, software and its various applications. Overall 43% of those surveyed declared themselves to be active in culturally-related fields almost equally split between creative activities, such as architecture and design and those more traditionally considered cultural, such as photography or education. The rest of the sample ranges from a predominant 28% of electrical, mechanical prototyping and robotics to a 6% of software coding and online services passing by a discrete 13% of materials and machineries components and solutions. On the one hand, this confirms the speculated tendency towards a cross sectorial offer and the integration of technology and design. On the other hand, this endorses literature stating the obsolesce of the debates around creativity and broadening the discussion to contemporary trends within capitalism (cf. Scott, 2014) in which there is cross-fertilization of the cultural and creative industries with technology and some aspects of the collaborative economy.

In this connection, the concepts of competitiveness and innovation tended to overlap in the minds of respondents. When people were asked to name the competitive advantage of their products or services, overall the answers could be split between the uniqueness of the output – product or service offered – and the originality of the offer or its conception and production. Many respondents simply mentioned innovation (13%) in some cases adding details about the peculiar type of innovation they were offering i.e. technical, logistic, design. While to the customization and uniqueness trend related also justifications linked to the origin brand i.e.

'*made in Italy*' (19%), followed by an adequate balance between quality and price (17%) or simply a high-quality offer (13%). Even here, the cross-sector collaboration of knowledge and skills to offer an innovative solution figured for 10% of respondents as a good reason to be competitive. This quest for customisation and newness recalls literature announcing new trends in small-scale manufacturing (Anderson, 2012; Birtchnell and Urry, 2016). Nonetheless, as also pointed out by some of the interviewees, the typology of innovation that those small firms are able to produce is more of the incremetal type rather than a radical one.

Looking at data on their income, this is mostly generated on the number of items or products sold with a certain balance between national and international clients. Some indicated that they had contracts from institutions promoting the digital and creative economy in Rome and an unexpected 5% declared income coming from the educational sector (cf. Anand and Watson, 2004). Recently Italy, following the USA model, has indeed started promoting schools with integrated fab-labs to allow children to become familiar with the combined use of manual work and new technological machineries. These initiatives are meant to create a new entrepreneurial culture and spur the direct employment of some makers in the likes of trainings for schools, help-desks for newcomer entrepreneurs and lifelong learning programs (cf. Sheridan et al., 2014). As confirmed by one interviewee at a local institution, an intervention in the educational system aims to trigger changes also in the labour market.

Another aspect proving that makers represent a new entrepreneurial figure are the blurred boundaries between local, regional and national economies. Some of the classical subjects of inquiry relating to manufacturing production cannot be applied to this sector. The questionnaire also included some more traditional questions on the economic performance of this soft-tech industry (e.g. location of clients, suppliers, raw material on local, regional, national or international scale), but most of those surveyed struggled to answer questions investigating the location of suppliers and clients. Makers do not follow the same purchase mechanisms of traditional manufacturing industries. Following the nature of 3D printing, they usually buy semi-assembled commodity parts locally from retailers or wholesalers with items like semiconductor chips or minor components for 3D printers being produced somewhere else, for example in China or elsewhere by multinationals. Or in other cases they offer digital services and applications and they might not have suppliers at all. These production dynamics have altered the traditional conception of the geographical dimensions with a stark difference between what is local – or produced on a national scale – and what is "global". Their relationship with the suppliers may vary and if they offer services or apps they might not have suppliers at all. If on the one side the main causes of this shift – globalization and new communication technologies - are clear, it also seems clear that these same processes have important implications for classical understandings of agglomeration, with labour market and informational linkages (Phelps, 1992) and untraded interdependencies (Storper, 1995) gaining more ground over permanent physical proximity. The next section will analyse elements of the *glocal* nature of this new enterprises addressing the most suitable geographical location for their settlement and the

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role of temporary clusters – and fairs – in bridging local and global networks (cf. Bathelt et al., 2004).

The geography of the maker movement: urban renaissance and the benefits of temporary clusters

The main trend emerging from the survey is the urban character of this new sector (see Table 1). Cities are undoubtedly leading the digital fabrication scene as 72% of those soft-tech innovators have chosen a central location for their activity. The reasons influencing the choice, mentioned in an open answer, vary from accessibility and connectivity reasons such as transport and parking availability to the traditional search for spatial proximity to other firms, institutions, amenities or dwellings. Besides that, sometimes the availability of an existing settlement let alone the choice of the general location prioritizing affordability and availability of spaces. Overall, the findings here confirm the salience of the traditional literature picturing cities as a diverse environment facilitating encounters and the exchange of ideas (Jacobs, 1969; Hoover and Vernon, 1959).

Despite the innovative and highly technological character of the proposed products and services these entrepreneurs still need above all to build ties. An urban environment allows professionals to keep contact with competitors and peers, institutions and clients (Storper and Venables, 2004; Hutton, 2010), granting also the dialogue between users, designers, and makers. This

urban dynamism is necessary for the coexistence of innovation, creative economy and entrepreneurial ventures. This 'new industrial revolution' (Anderson, 2012) - or more accurately the entrepreneurial ecosystem that includes makers - is still developing, as such it needs to overcome risks and uncertainties, by building a solid network of professional linkages [cf. cities nursing innovation idea proposed by Duranton and Puga (2001)]. On the other hand, the easy accessibility of the new making and customization techniques are compatible with the time-space compression or *glocalisation* most attainable in urban environments (cf. Capdevila 2014; Foord 2013). The benefits coming from the institutional support and the local *embeddedness* (Granovetter, 1985) remain a necessity to avoid isolation and generate financial and social opportunities, while the latest communication technologies and the adequate infrastructures offered by an urban location allow contacts at the international or global scale.

A further confirmation of this trend is provided by the changes registered among working spaces, with a predominance of SSOSs. The typical office or factory venue is not any longer the most common premises for businesses and this is commensurate with their digital orientation, however only 21% of the attendees declared to be working remotely from home or another space (these data also included online communities and forum stalls). A variety of themes emerged to justify their choice, mainly regarding the proximity with various amenities and infrastructures but also with other firms and professionals especially if they were in SSOSs. A variety of origins and nationalities were represented among those surveyed, showing that this is not an exclusively Italian phenomenon: the urban centrality and the search for knowledge

spillovers and professional linkages are independent from the nationality and culture of the business owner.

Similarly, attending the Maker Faire is a way to build professional linkages, test and improve the businesses, just as SSOSs but at a bigger scale. Therefore, it tends to be iterative, more than half of the surveyed businesses had already participated in at least one previous edition. This is more likely among younger firms as once the business has gained some maturity – with products or services solidly on the market - the participation in the fair loses significance. So, the institutional conception of the event as a tool to give exposure and support to new businesses found some empirical confirmation. In line with this speculation comes the assessment, within the survey, of the personal expectations of the participants and the reasons why they rented a space in the fair.

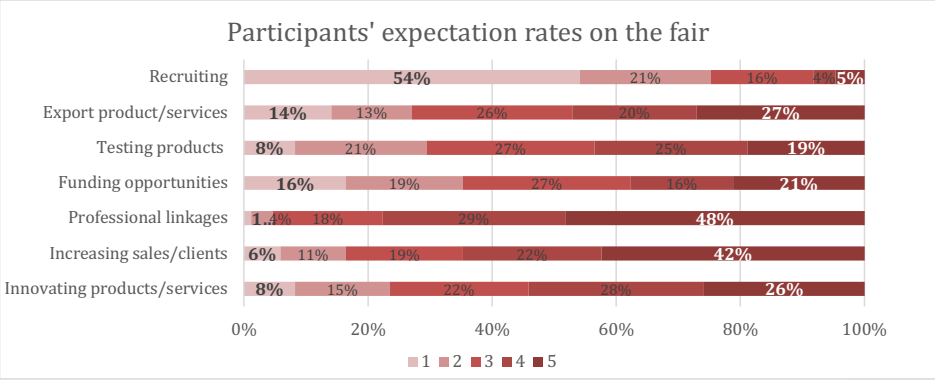

Figure 1: Expectations of the Maker Faire of Rome 2015. Participants were asked to rate in a crescent scale from 1 to 5 the influence of a set of speculated reasons and expectations from owning a stall to the event.

Little wonder then, that the main aim of participation at the fair according to my respondents was to gain professional linkages and business testing. The questionnaire asked makers to rate from 1 to 5 a set of possible reasons for participation at the Maker Faire. The results are graphed in Figure 1. The 48 % of the participants rated professional linkages as the most important reason for their presence at the fair. This was followed by the possibility to increase sales or clients (42%). Considered equally important were the possibilities for improving exports, innovating products and gaining funding. Recruiting additional labour seems to be the least of makers' concerns when attending the fair. These findings suggest that once a business is mature, exposure and linkages are assessed according to different criteria, which are mainly related to marketing and market demand trends.

Contacts, professional linkages, networking, promotion, updating, funding opportunities were also the most recurring words when people were given the chance at the end of the questionnaire survey to openly name the personally expected benefits from the event. Only two people among all mentioned 'fun'. In this sense, the professionals' expectations match the institutional intentions to create a new innovation hub in the city of Rome.

However, this is a subtly different type of urban economy that should be regarded in relation to the surrounding socio political context and its economic processes. So, it is rather to the accounts of Barber (2013) or Katz and Bradley (2013) that this type of innovation conforms, than to the timeless one emphasised by Glaeser (2011). This is a discussion about entrepreneurs and small firms in a new sector that could shape the next wave of urban regeneration, but most of all this is a story of *unhealthy* economies and some attempts to recover. Other examples could be found from the city of Detroit (cf. Sheridan et al., 2014) observing the way makers' communities are stronger there, than in healthier world cities in the same national economies . The next section will highlight that if these grassroots beginnings are spontaneous efforts (Bathelt and Boggs, 2003) at a later stage the role of institutions is crucial to establish the phenomenon.

'Making' an exhibition: instituting the new entrepreneurial ecosystem

The format of the Maker Faire can reveal a lot about the country in which it is organized. The results from this survey confirm the entrepreneurial orientation of the Italian edition. Makers as a new entrepreneurial class are context dependent. As emerged from the set of semi-structured interviews led among the Roman makers and in particular citing the words of an interviewed organizer of the event: "in the USA the event is more a showcase for hobbyists and the DIY culture while in Italy it is conceived as a tool [offered by the public administration] to give exposure to young entrepreneurs". Still unresolved is whether the support given to the event is

enough and how this could become the nexus point of a new dedication for the city of Rome. Other points of views include the criticism that institutional support is rather a consolation prize offered by the authorities to contrast and hide the effects of a broken and irreparable economy (cf. Rossi 2017).

The Maker Movement has often been compared to grass roots movement. The expression usually belongs to the political and sociological fields, referring to bottom-up processes or communities demanding rights or better life conditions in a context of inadequate or inattentive authorities. Similarly, in contexts like Italy, marked by economic and political struggles, with governments failing to provide enough social security, Makers represents the voice of a hidden workforce in a new emergent economic sector. The interviews conducted in some famous Roman fab-labs have shown that they share some clear political messages widely imbued of claims for social innovation and inclusion. The typical users of Roman SSOSs are: students or creative professionals, young enterprises, free-lancers, start-ups, or unemployed middle-aged people trying to reinvent themselves. In these spaces it is the social interaction and the cooperation that are considered sources of value-added (cf. Merkel, 2015).

In Rome as with other cities in western economies, makers should be therefore intended as a part of a wider - and urban settled - ecosystem of entrepreneurs coping with economic risks, lack of jobs and uncertainties. On a national scale, another relevant data is the emergence of a considerable number of '*innovative start-ups*' (out of 6000, more than 600 in 2016 were in the

regional territory of Rome)[1]. The support granted by institutions to the related events, like Maker Faire or Rome Start-up Week, stands as an attempt to remake the economy of Rome, blending the digital industry with the enormous potential granted by the cultural patrimony of the city. Hosting such a large international event is the starting point to build a reputation in that sector, (also indicated by the official label obtained by the event – 'The European Edition') to stimulate professionals' encounters and a network creation and ultimately a well-known top-down strategy to support the generation of a cluster (cf. Ramírez –Pasillas, 2008).

According to an interviewee among the organizers of the fair, the choice of Rome as a city to host the fair is the result of a combination of lucky - and unlucky - circumstances from a forward-looking vision of a famous politician who, close to the American experiences, was able to see the potential in importing and encouraging the Maker Movement but also to guarantee the presence of some major international sponsors to host the event. Secondly, this is a result of both the considerable presence of public institutional bodies and the economic struggles of Rome. This presence grants the possibility to shorten the bureaucratic procedures and the tacit support needed to have the easy availability of the facilities and funds needed to organize such an event. As confirmed by another institutional actor, the 'eternal city' reputation allows a natural branding attraction, facilitating the success of the fair. Finally, the economic

[1] The business registry of "innovative start-ups" held by the Chamber of Commerce was established by the Italian law n. 221 of 2012. The sets a number of criteria for which a certain new firm could be defined as innovative and be granted fiscal benefits for the first 5 years of activity. Registries are published at the end of each term on a dedicated website powered by the Italian Chamber of Commerce (http://startup.registroimprese.it/isin/home).

uncertainties put the city in the desperate need of a new economic vocation as the economy of the city was historically based on the public and the construction sectors (cf. Katz and Bradley, 2013; Bathelt and Boggs, 2003).

The interviews revealed the existence of a very strong network of 'untraded relationships' of 'trust' (Storper, 1995) among the various actors both from institutions and the professional class. This social engagement therefore, does not exclude the necessity, especially in a phase of economic austerity, of a national and regional strategy supporting entrepreneurs. It conversely confirms the crucial role of institutions in supporting the settlement of a substantial hub or cluster (Amin and Thrift, 1995; Mazzucato, 2013), once the bottom-up process of innovation has happened. Innovation is a collective act thus it needs a diversity of actors and skills to spread (Bathelt and Boggs, 2003), resulting from a synergy of top-down interventions and bottom-up tensions. Otherwise the risk is to fall in a complete neo-liberalization of the urban environment as the definition of 'start-up urbanism' by Rossi and Di Bella (2017) suggests.

The Roman reality is still quite fragmented - despite a bottom-up innovative ferment, a well-established network of untraded relationships and a key flagship event - a cluster or hub of innovation linked to these new enterprises is still far from being a leading economic sector for the city. This because of a lack of central planning and of common objectives that could elevate a bottom-up phenomenon to a useful systematized hub. An interlocutor from the Roman municipal assembly pointed out how the fair would still be disconnected from the others

economic sectors e.g. hospitality or the cultural industry of museums and similar amenities, despite the big dimensions achieved in terms of participants. Similarly, another interviewee from a local authority identified the cause in a lack of cohesion between the planning and the business authorities: the city of Rome with the makers' circle as well as the collaborative world of SSOSs and the creative industry in general, should develop some common objectives to support and brand a proper innovation hub. Or in other words to make a step forward, Rome should become aware of this potential and start exhibiting it through the institutional intercession.

Conclusions

This study of the Maker Faire of Rome suggests the growing importance of temporary clusters as a tool used by the local institutions to accelerate and consolidate business in an area. However, the findings show some wider embryonic changes that are occurring in most of the developed countries. Here, I am referring to a concept that goes beyond the theorization of creative cities or makers: a new entrepreneurial sector is awakening, suggesting the emergence of a new urban economy.

This paper has first described the key occupational and industrial novelty of this group. Makers represent a very heterogeneous set of activities escaping any traditional sectorial approach. The size of firms has shrunk, the working spaces are different, and the main driving sector is a

mixture of technology, creativity and cultural industry, which is characterized by accessibility to all and customization of the offer. Referring to the second geographical query, the main analysed trend points to a growing concentration of small innovative businesses contributing to the contemporary urban economies. In the specific case of makers, despite the digital features of their production they tend to settle in urban shared serviced office spaces. This urban centrality entails a new geography of innovation if compared to the case of industrial districts, which have been for years the location of innovation for traditional manufacturing activities.

There are multiple reasons triggering such geographical choice. Some relate to the embedded cultural contents of the sector, but as the entrepreneurial innovation led by makers is still in trial phase, the creation of a suitable network and the accessibility of amenities and infrastructure stand as keys. These professionals need to test ideas and to establish linkages but new communication technologies have accelerated the course of progress. Fairs speed up the process, though they also cover an important institutional role.

There are deep socio-political entanglements between this new economy and its generative context. In Rome the institutions have supported a global major label such as Maker Faire and oriented funding to build a new entrepreneurial culture from the educational level. This suggests the aim to contrast the current economic and political struggles relocating the city's economy. The fairs grant an entrance ticket to exhibit innovation and new firms, though a question

remains open on whether the exhibition of new activities is enough to actively allow the creation of a new cluster.

Academic debates recently have witnessed a major revival of the Schumpeterian ideas on creative destruction and entrepreneurialism, with leading theorists and policy makers concluding that innovation should happen on its own and institutions should not interfere with this spontaneous process. Some of the limits of this perspective have been pointed out (Mazzucato, 2013) while it also provides a convenient excuse for further cutting public sector expenditures and programmes. The findings in this study also confirm the limits of these perspectives and opens paths to new research on the subject. There is a great potential for further investigation of the Maker Movement not least for all that it might contribute to a further updating of agglomeration theory considering the changes occurred in advanced economies and their related labour markets. A number of questions remain open on the future of this new industrialization.

Moreover, in the planning sector research should usefully consider the contribution and potential of those new entrepreneurs to those urban economies like Rome in need of urban economic regeneration given the presence of unused space and properties. Intriguing policy questions emerge since the evidence suggests that supporting big events and exhibiting the creation of a new class of entrepreneurs, fosters a start-up approach to urbanism (Rossi, 2017) neglecting real economic problems e.g. the increasing young unemployment rates, the necessity

of an update of the planning system to allow for coordinated regeneration strategies at the local level. This approach means rather privatizing some basic duties of a central government and it stands as a neo-liberalization of jobs' and social security's provision. Surely, it does not allow a real cluster creation. Only some specific structural public policies will elect any self-organized process to a higher rung of the ladder for the establishment of a new cluster, which is actually able to provide new jobs and economic growth within that region. I believe that if new activities are likely to appear in cities as a reaction to lagging economic conditions, after the bottom-up processes leading their generation, a more structured and systemic institutional intervention is needed.

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