



Are cities the font of innovation? A critical review of the literature on cities and innovation

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ARTICLE INFO

Article history:

Available online 24 July 2012

Keywords:

Innovation
Cities
Rural areas
Temporary face-to-face
Geographic systems

ABSTRACT

It has almost become a research premise, as opposed to a research question, that cities are the font of economic innovation. This review explores the connection between innovation and cities. In order to understand why this question arises, I first situate the exploration within the wider framework of the innovation discourse, and then within the more specific corpus of work that establishes a connection between innovation and territory. Although this territorial approach provides arguments and evidence in support of the prevailing idea that innovation is an urban phenomenon, there is also a disparate body of work that does not support this view. Two key questions emerge from this review. First, is it possible to distinguish the identification, marketing and promotion of innovation (that indeed occurs in cities, which are the loci of market power) from innovation itself (that does not necessarily occur in cities)? Second, given that innovation is understood to emanate from interactions and knowledge flows leavened by know-how and finance, does it make sense for innovation to be attached to any particular geographic or social milieu?

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Introduction

Even if one restricts oneself to the narrow field of economic innovation—i.e. the emergence of new industries, new products and new processes—it is almost impossible to review all that has been written over the last few years regarding its connection with cities. Numerous books have been published that explore innovation¹ and city growth (e.g. Acs, 2002; van Oort, 2004), innovative cities through history (e.g. Hall, 1999), creativity—understood as a determinant of innovation—and cities (e.g. Andersson, Andersson, & Mellander, 2011; Cooke & Lazaretti, 2008; Florida, 2002; Landry, 2008; Montgomery, 2008), cities' creative capital (e.g. Krätke, 2011), or, quite simply, their triumph as humankind's greatest invention (e.g. Glaeser, 2011). Forests have been cut down and data centres engorged with papers on metropolitan innovation processes, whether at the scale of the neighbourhood (e.g. Currid, 2007; Florida, 2009; Hutton, 2009²), the industrial cluster (e.g. Feldman & Francis, 2003; Potter & Miranda, 2009; Rantisi, 2011; Wolfe, 2009), the metropolitan area (e.g. Duranton, 2011; Duranton & Puga, 2001;

Simmie, 2001) or of global city systems writ large (e.g. Castells, 1996; Komninos, 2011; Snyder & Wenger, 2004).

Many of these papers and books are insightful analyses of particular instances and processes of innovation that occur in cities. Some actively promote the idea that cities are the loci of innovation and creativity (such as Florida (2009) and Montgomery (2008)), others present case studies of innovation that occurs in cities (such as Currid (2007) and Potter and Miranda (2009)), and yet others still attempt to explain how and why innovative activity occurs in cities (such as Acs (2002), Duranton and Puga (2001) and Feldman and Audretsch (1999)).

However, the overall impression that can easily be gained after immersion in this vast literature is one of confusion. Notwithstanding the way in which policy makers have internalised the idea that cities and economic innovation are linked, and despite the vast sum of research that seems to corroborate this idea, an uncomfortable feeling remains. A number of questions seem to be elided, the most basic one being—why bother with innovation? This term, laden with positive normative associations, hides not only a multitude of processes that can all lay claim to being innovative, but also gives little indication of why innovation is necessary, whether it is always a good thing, and, if it is a good thing, who benefits from it? Another question that is not usually confronted concerns the apparent absence of any constructive role that non-urban settings can play in the innovation game. The consignment of non-urban spaces (and also of non-creative classes) to the scrap-heap of economic dynamism is of some concern, and can only be understood, I argue, if innovation is approached as a discourse—i.e. as a

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¹ Unless otherwise specified innovation will refer to economic innovation, to be distinguished from social, policy and – to some extent at least – cultural innovation. Since the latter is often marketed (Scott, 2008), this type of innovation is ambiguous. However, to the extent that it is marketed, it will be considered to fall under the economic innovation rubric.

² This book purports to be about different cities, but the empirical material presented focuses on different types of neighbourhood within a city.

dominant narrative that furthers some interests over others—rather than as an object of economic scholarship.³ From having been an important response to economic upheavals in the 1970s and 1980s, innovation has now taken on the trappings of a narrative which illuminates as much as it can obfuscate. The point of this review is not to grapple with the complex issues of discourse and hegemony, nor to argue that there are no wider social rationales for focussing on innovation: its aim is to assess the empirical evidence and arguments that establish a connection between cities and innovation. However, even such a circumscribed undertaking necessitates a preliminary exploration of the reasons why so much time, effort and public resources are dedicated to innovation, and, why, furthermore, geography is brought into the discussion.

For these reasons, I will begin this paper, not by discussing the link between innovation and cities, but by briefly setting out a few ideas that explain why innovation is currently believed to be key to economic growth and prosperity. Indeed, it is this fundamental idea that legitimises much of the current work on how and where innovation occurs. The second part then focuses upon the literature that explores why innovation and cities are thought to be inextricably linked, and also discusses some of the literature which calls into question this idea. The perspective taken in this paper is that the link – if any – between innovation and cities is a particular instance of the connection between innovation and territory: thus, the wider arguments relating to why it is thought that innovation is connected to territory will provide important context.

The argument that runs through this critical review is that whilst, of course, some economic innovation occurs in cities and some types of innovation are overrepresented there, innovation can and does occur in non-urban environments, and innovation occurring in cities may be dependent on activities that occur outside of them (and vice versa). If cities are conceived of as temporary congregations of actors with diverse trajectories through time and space (Massey, 2005), then it is in fact difficult, if not impossible, to isolate them as specific sites of innovation. Indeed, the only type of innovation that is specific to cities may well be social and policy innovations devised to tackle specifically urban issues (such as the rising urban inequalities brought about by high remunerations for elite innovation workers: see Krätke, 2011; MacCallum, Moolaert, Hillier, & Vicari Haddock, 2009; Scott, 2008), but this type of innovation is not the subject of the essay.

Why innovation?

Since the industrial revolution (Hall, 1999), innovation has been at the core of economic development and growth. New technologies, new products and new production processes are the industrial revolution's defining characteristics. Why, therefore, has innovation only taken on such a large role in policy circles and academic analysis since the late 1980s? This can be understood as a consequence of three distinct processes.

First, it was in the 1970s that the Keynesian consensus, which had been the governing economic paradigm during the prosperous post war years (Singer, 1997), began to crumble under the strain of higher oil prices, rising inflation and market saturation. Economic growth was no longer driven by post-war reconstruction and expanding internal markets. The management of the economy through governments' judicious oversight of aggregate spending and industrial relations lost popularity in favour of a more individualistic and agent-based narrative of how the economy works. This was, at least partly, a means whereby profits could be sustained by reducing costs in the face of dwindling internal markets. A related

strategy was the promotion of innovation: a saturated market will become unsaturated if new needs are created and new goods produced to satisfy them. A number of geographers described the move from Fordism to post-Fordism (Amin, 1994; Benko & Lipietz, 1998), by which is meant, in general terms, a move away from the post-war equilibrium between the state, business and society (a system premised on a particular technological paradigm, that of mass production in large firms), towards a system characterised by innovation, competition and alliance building between opportunistic actors (a system based upon another technological paradigm, that of customisation and flexibility). In particular, this new system of regulation relied on smaller firms, out-sourcing and de-unionisation: the city and region became, according to Storper and Walker (1989), the locus for resistance against these wider trends which could easily engulf local communities. It was local dynamics and institutions that could be mobilised in order to protect communities against global trends and against mobile corporations.

A related body of work had, during this period, questioned the nature of the corporation (Putterman & Kroszner, 1996). As firms were considered from the perspective of their management, technology and location, it became increasingly evident that organisational factors such as vertical integration, their innovation choices, and their locational decisions, were strategic, and therefore evolved as markets, technology and policies changed (Chandler, Hagström, & Sölvell, 1999). In some respects this approach mirrored, from the perspective of the firm, the work on post-fordism and on the changing geographies of production (Massey, 1995), which tended to adopt a communitarian and territorial approach.

A second related trend that fully emerged in the 1970s and 1980s was the rise of production in developing nations (Drache & Gertler, 1991). This accelerated the pace of de-industrialisation in the Western world, as large numbers of well-paying manufacturing jobs fell prey to cheaper imports from newly industrialised nations, and as corporations reorganized their production chains to take advantage of opportunities for geographic arbitrage (Dicken, 2011; Held, McGrew, Goldblatt, & Perraton, 1999). Of course, this is not the whole story: manufacturing jobs were also being lost as industries became more productive and as labour shifted out of these productive sectors towards less easily automated service jobs (Bryson, Daniels, & Warf, 2004). However, the perception that Western countries could no longer compete with developing nations on a cost basis drove governments towards quality and innovation-based industrial policy. Indeed, a very successful advertising campaign that ran in France during the 1970s reassured the population by repeating 'En France, on n'a pas de pétrole, mais on a des idées' (In France we have no oil, but we have ideas).

A final reason that has contributed to the current crescendo of interest in innovation is the incorporation of technological change into formal models of economic growth. It may seem odd, given the preceding 200 years of industrial revolution, that it was only in the 1950s that this occurred (Ray, 1998; Solow, 1956). A full discussion of this would involve the history of ideas in economics and the role that formal mathematical models play therein (Mirowski, 1989): of more relevance here is that this realisation prompted the theorization of endogenous growth (Lucas, 1988; Romer, 1990), which shows how economies can grow due to their internal dynamics, and in particular due to information exchanges and learning processes that lead to technological change—also known as innovation.

In this context, two parallel sets of ideas emerged. First, at the national level, innovation was presented (and continues to be presented) as the principal way in which economic growth can be stimulated, both by way of internal consumption and by way of competition with newly industrialised nations. Since Western countries can no longer rely on their dominant terms of trade (a historic legacy of colonialism) to export manufactured goods, and

³ The subject of economics as discourse has been covered by, amongst others, McCloskey (1998) and Samuels (1990).

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