

Beyond Production and Standards: Toward a Status Market Approach to Territorial Innovation and Knowledge Policy

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MACNEILL S. and JEANNERAT H. Beyond production and standards: toward a status market approach to territorial innovation and knowledge policy, *Regional Studies*. Current theoretical and policy models of innovation are usually production based and give prominence to producer–supplier relations. Drawing on a socio-economic approach to markets, the paper reconsiders these established models in order to broaden the understanding of innovation and territorial knowledge dynamics. The premium segment sports cars innovated in the UK's West Midlands is examined and the production and standard market of the global automotive industry is contrasted with the status market in which new local innovation embed across specific supplier–producer and producer–consumer relations. A status innovation policy approach is finally proposed to address innovation in developed economies.

Territorial innovation models (TIMs) Territorial knowledge dynamics (TKDs) Production market Status market
EURODITE

MACNEILL S. and JEANNERAT H. 超过生产与标准之上：迈向领域创新和知识政策的身份地位市场取径，*区域研究*。当前的创新理论与政策模型，经常是根据生产，并且凸显生产者—供给者的关系。本文运用市场的社会—经济取径，重新考量这些已建立的模型，以扩展我们对创新和领域知识动态的理解。本文检视英国中西部所创造的顶级区块跑车，并将全球汽车产业的生产及标准市场，与身份地位市场相互对照，在身份地位市场中，新的在地创新，镶嵌于特定的供给者—生产者和生产者—消费者的关系之中。本文最终提出身份地位创新政策取径，以处理已发展经济体中的创新问题。

领域创新模型（TIMs） 创新知识动态（TKDs） 生产市场 身份地位市场 EURODITE

MACNEILL S. et JEANNERAT H. Au-delà de la production et des standards: le marché de statut comme approche de l'innovation territoriale et de la politique du savoir, *Regional Studies*. Les modèles théoriques et politiques actuels d'innovation sont le plus souvent fondés sur la production et soulignent les relations entre producteurs et fournisseurs. Dans une approche socio-économique des marchés, l'article reconsidère ces modèles afin d'élargir notre compréhension de l'innovation et des dynamiques territoriales de connaissance. Nous étudions des innovations dans le segment sport de l'industrie automobile de la région anglaise des West Midlands. Nous contrastons le marché de production et de standards de l'industrie automobile globale avec le marché de statut dans lequel l'innovation locale s'encastre dans des relations fournisseurs-producteurs et producteurs-consommateurs spécifiques. Une approche par une Politique d'Innovation de Statut est finalement proposée pour aborder l'innovation dans des économies développées.

Modèles territoriaux d'innovation Dynamiques territoriales de connaissance Marché de producteurs Marché de statut
EURODITE

MACNEILL S. und JEANNERAT H. Jenseits von Produktion und Standards: auf dem Weg zu einem Statusmarkt-Ansatz für territoriale Innovation und Wissenspolitik, *Regional Studies*. Die derzeitigen theoretischen und politischen Modelle der Innovation sind in der Regel produktionsbasiert und stellen die Beziehungen zwischen Herstellern und Lieferanten in den Vordergrund. Ausgehend von einem sozioökonomischen Ansatz für Märkte werden diese etablierten Modelle in diesem Beitrag einer Neubewertung unterzogen, um das Verständnis der Innovation und territorialen Wissensdynamik zu erweitern. Wir untersuchen

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die Innovation im gehobenen Sportwagensegment der britischen Region West Midlands und kontrastieren den Produktions- und Standardmarkt der globalen Automobilindustrie mit dem Statusmarkt, in dem die neue lokale Innovation in spezifische Beziehungen zwischen Lieferanten und Herstellern sowie zwischen Herstellern und Verbrauchern eingebettet ist. Zum Abschluss wird ein Ansatz für eine Politik der Statusinnovation vorgeschlagen, um auf die Innovation in entwickelten Volkswirtschaften einzugehen.

Territoriale Innovationsmodelle (TIM) Territoriale Wissensdynamik Produktionsmarkt Statusmarkt EURODITE

MACNEILL S. y JEANNERAT H. Más allá de la producción y las normas: hacia un enfoque de un mercado de estatus para la política de innovación y conocimiento territoriales, *Regional Studies*. Los modelos teóricos y las políticas actuales de innovación se basan generalmente en la producción y conceden mucha importancia a las relaciones entre productores y proveedores. A partir de un enfoque socioeconómico de los mercados, en este artículo reconsideramos estos modelos establecidos con el objetivo de comprender mejor las dinámicas de innovación y conocimiento territoriales. Estudiamos la innovación en el sector de coches deportivos de lujo en la región británica de West Midlands y comparamos el mercado de producción y normas de la industria automovilística global con el mercado de estatus en el que la nueva innovación local se incorpora en las relaciones específicas entre proveedores y productores y entre productores y consumidores. Para terminar proponemos un enfoque para una política de innovación de estatus que aborde la innovación en las economías de desarrollo.

Modelos de innovación territorial Dinámicas territoriales de conocimiento Mercado de producción Mercado de estatus EURODITE

JEL classifications: R, R1, R5, R10, R58

INTRODUCTION

The concept of the knowledge-based economy (KBE) has become a central feature of economic development policy in advanced economies. It is argued that the key to economic advancement is the continual generation and exploitation of knowledge as a fundamental input to innovation (DUNNING, 2000; DAVID and FORAY, 2002). Territorial approaches have identified systemic interactions where networking reduces the search costs for capital, labour, markets and trading partners and the sunk costs of knowledge accumulation. It is also argued that knowledge sharing is essential to the innovation process where a mix of internal (to the firms) and external knowledge inputs is captured, developed and exploited in economic spaces. A growing business sector has been of firms that produce, supply and network knowledge itself. Such firms, knowledge-intensive business services (KIBS), have been the subject of much interest amongst economic geographers, economists and business analysts (SIMMIE and STRAMBACH, 2006).

The main focus of both analysis and policy has been on upstream inputs of capital, skills and (often technical) knowledge to the innovation process and/or on firms' internal processes and organizations. While these discourses implicitly recognize the value of downstream value appropriation, little analysis has been carried out on the relative dynamics of producer and consumer knowledge regimens. In addition, very little theoretical and policy reflection has been built on an integrated comprehension of the socio-economic organization of markets and of knowledge processes.

Drawing in particular on WHITE's (1981, 2002) and ASPERS' (2008, 2009) socio-economic conceptions of market construction and on the 'servitization of manufacturing' literature as summarized by BAINES and

LIGHTFOOT (2013), the paper reconsiders the usual understanding of territorial innovation and knowledge policy.

The case of the production and sale of premium segment sports cars in the UK's West Midlands is examined to contrast the global automotive industry operating in a standard and production market with a local strategy highlighting a market construction whereby producers and consumers value a mutual social status. The paper discusses how this *status market* (ASPERS, 2008, 2009) implies specific upstream (supplier-producers) and downstream (producer-consumer) relations, involves particular KIBS and reflects particular territorial knowledge dynamics (TKDs).

The paper concludes with observations about the utility of an analysis based on market construction and how it can be used to tie together different aspects of the KBE. Also, how the creation of a value system formed on a wide knowledge base linking production, services and end consumers underlies a new geography of innovation. It is finally argued that a status innovation policy (SIP) could be a pertinent approach to support territorial development in developed economies.

INNOVATION, KNOWLEDGE AND SERVICES IN THE ECONOMY

Innovation is widely regarded as a fundamental driving force of the economy (FREEMAN, 1987, 1995; EDQUIST, 1997). Starting from Adam Smith's division of labour (hence knowledge) theories of knowledge as a resource driving economic growth were developed by classical and neoclassical economists ranging from Alfred Marshall's unspecified mechanisms of externalities to the mathematical models of growth theory of ROMER (1986) and LUCAS (1988). Theories of

evolutionary economics suggest that innovation does not just come from the autonomous actions of individual firms but is also dependent upon external influences extending beyond interactions of producers, suppliers and users to include all the 'elements and relationships which interact in the production, diffusion and use of new and economically useful knowledge' (LUNDVALL, 1992, p. 2).

Besides these epistemological foundations, knowledge has been more recently approached in a systematic manner as the rise of a new historical phase of the economy where added value comes from actions from and on knowledge rather than materials with greater reliance on intellectual capabilities than on physical inputs or natural resources (CASTELLS, 1996; POWELL and SNELLMAN, 2004). A 'sea change' has been the growth in the value of intangibles (DUNNING, 2000) such that ratios of intangible to tangible assets in company books of 20:80 in the 1950s had reversed to 70:30 in the 1980s.

This KBE is also characterized by a rapid expansion of the knowledge stock, the rise in traded knowledge as a product in its own right, the growth in importance of KIBS and the shortening of product life cycles (DAVID and FORAY, 2002). In addition, information and communication technology (ICT) has brought radical change to how knowledge is generated, circulated and used. It has enabled codification of what had been tacit, personal or experienced-based knowledge (POLANYI, 1983) and the ability to transmit and access it at long distance (STEINMUELLER, 2002) leading to global communities of practice. CREVOISIER and JEANNERAT (2009) add that the incorporation of knowledge into economic processes is no longer a sporadic process, as in the unintended spillover model, but is systematic and permanent.

Also the main economic growth sectors, such as ICT, biotechnology or business services, depend on knowledge generation rather than on traditional manufacturing. DAVID and FORAY (2002) suggest that growth in these industries results from a close relationship to science and technology. As such the KBE is often seen as synonymous with a 'new economy' centred on high-tech sectors. However, ROSENBERG (1976) highlighted that often too much importance is given to scientific knowledge and too little to engineering or organizational knowledge. SMITH (2002) argues that knowledge creation is an economy-wide process, not solely dependent upon research and development. Thus the KBE is not solely about high-tech sectors but encompasses all economic activity, from services to manufacturing (CAIRNCROSS, 1997; THUROW, 2000).

In these conceptual approaches, services tend to be associated with the 'new economy'. The idea of replacing a manufacturing economy with a service-based one in developed economies was taken up in much of the policy, media and public perception. However, as observed by BRYSON (2010) and DANIELS and

BRYSON (2002), manufacturing and services are interdependent. Thus physical products also encompass some degree of services and services are backed up by physical products. BRYSON (2010) refers to hybrid products that combine physical and service functions. An obvious example is iPhone and iTunes, but services based on manufactured products are many and varied. For example, machine tool manufacturers may offer services such as installation, training, ongoing maintenance and software updates. VANDERMERWE and RADA (1988) coin the term 'servitization' to describe a business model where manufacturers offer various follow-up services and, in some cases such as aero engines and trucks, even retaining ownership of the product and renting or leasing to the consumer (BAINES and LIGHTFOOT, 2013; BAINES *et al.*, 2008, for a summary and classification of servitization).

In the automotive sector, services impacting upon consumers' experience include upstream engineering and design as well as downstream marketing, promotion, sales and servicing. Additional services include logistics, finance and insurance. These KIBS characterize not only a new economic paradigm but are also multi-level drivers of knowledge interactions and innovation in a broader economic system (STRAMBACH, 2008).

Well-known examples of automotive companies seeking to enhance consumer experience include the VW park 'Autostadt', where car purchase can be part of a themed 'family day' (DANIELS and BRYSON, 2002) and the 'Land Rover experience' where consumers can try off-road vehicles on a multi-surface, multi-terrain circuit. Both seek to involve the consumer by providing an interpersonal experience around a standardized product. However, in reality neither are part of an innovation matrix since consumer feedback into product development is limited.

TERRITORIAL KNOWLEDGE DYNAMICS

The relation between knowledge and economic development was initially characterized at the level of nation-states since national economies could be seen to have different specializations, research bases, educational systems and fiscal regimens impacting on innovation (PORTER, 1990, 1998; LUNDVALL, 1992; NELSON, 1993). However, COOKE (1992) began a focus of interest on the local or regional dimension since regional economies developed differently within the same national environment (BRACZYK *et al.*, 1997; FLORIDA, 1995; GORDON and MCCANN, 2000), and despite the globalization of products and services, many 'soft' relational and social factors supporting economic success seem most evident at local level. A number of territorial innovation models (TIMs) were proposed in attempts to capture the features of localized innovation systems (see MOULEART and SEKIA, 2003, for a synthesis).

These models progressively evolved to pay more attention to the cognitive processes (LAGENDIJK, 2006) at the roots of knowledge production (GIBBONS *et al.*, 1994) and circulation (SAXENIAN, 2006) characterizing the KBE. Analysing knowledge as a shared and collective learning process (COOKE, 2002; ANTONELLI, 2006), TIMs were reconceptualized to address even more complex and intertwined multi-sectoral and multi-local TKDs (CREVOISIER and JEANNERAT, 2009).

Firstly, more prominence has been given to 'Jacobian' spatial economies of knowledge diversification and combination compared with the 'Marshallian' spatial economies of knowledge specialization and accumulation emphasized by TIMs (see VAN DER PANNE and VAN BEERS, 2006, for a discussion of the Marshall-Jacobs arguments). In this perspective, regional innovation systems have been described as multi-sectoral platforms of 'related variety' (FRENKEN *et al.*, 2007) able to compete in a global economy through production processes combining different 'analytical' (scientific), 'synthetic' (technical) and 'symbolic' (culture-based) knowledge bases (ASHEIM *et al.*, 2007, 2011).

While symbolic knowledge is often compartmentalized as marketing, branding and advertising, LASH and URRY (1994) and LEE (2002) suggest that goods derive as much significance from symbolism as from material content. CREVOISIER and JEANNERAT (2009) also highlight the importance of symbolic knowledge, observing that innovation increasingly depends upon socio-cultural dynamics as opposed to pure technology.

Besides the obvious growth in specifically cultural industries (media, entertainment, sport, tourism/leisure, etc.) they observe that the 'incorporation of cultural and aesthetic aspects, within products' is becoming increasingly important across a wide range of sectors. These cultural and aesthetic aspects have also to be understood in the context of a development of an 'experience economy' (PINE and GILMORE, 1999; LORENTZEN and JEANNERAT, 2013) where end consumers are decisive in the economic valuation of goods and services through personal engagement in the consumption experience.

Secondly, a new conception of territorial innovation has been proposed to take into account the ICT revolution and the globalized mobility of knowledge resources (e.g. firms and workers). Castells argues that societies are constructed around different flows including capital, information, technology, organizational interactions, images, sounds and symbols. He proposed the idea of a new spatial form characteristic of social practices that dominate and shape the network society, which he called the 'space of flows' (CASTELLS, 1996, p. 412). MALMBERG and MASKELL (1997) suggest that there is a division between knowledge that can be codified, and hence able to be transmitted and utilized at long distance, and that which is embedded in localized cultures

and institutions and is therefore likely to be retained in localized specialisms. BATHELT *et al.* (2004) also distinguish between near and distant interactions on the basis of codified (explicit) or tacit (implicit) knowledge. Thus they speak of 'pipelines' and 'local buzz' where codified knowledge can be searched at long distance but is absorbed and utilized within localized 'face to face' networks where it can be socialized and exploited.

Such a multi-local and multi-scalar perspective has been highlighted by literature that emphasizes how in the modern economy production of goods and services is organized in space through 'global production networks' (GPNs) (COE *et al.*, 2004, 2008; HESS and COE, 2006). These involve both traded and untraded interactions amongst firms and agents that can be either geographically proximate or distant. They suggest that within them different activities take place at different locations with a division of innovative activities. Further to this, they observe that, for individual regions, it is imperative to capture value added from local knowledge interactions within these global networks. Thus institutional frameworks and policy support in less developed regions try to capture and retain high-value activities whilst in developed regions the objective is to retain and develop such activities and, as appropriate, shed those which can be undertaken cheaply elsewhere. Using similar arguments, DAHLSTRÖM and JAMES (2012) discuss how local economic actors and policy-makers might develop capacities to anchor and develop mobile knowledge.

Within these cross-sectoral and multi-local TKDs, the role of services, particularly KIBS, is conceived as twofold. On the one hand, they are perceived as new lead activities localizing in competitive cities embedded in the global circulation and production networks of the creative economy (ASHEIM and HANSEN, 2009; BOSCHMA and FRITSCH, 2009; JACOBS, 1969; LORENTZEN and FREDERIKSEN, 2008; SCOTT, 2006). On the other, they are analysed as catalyst activities creating bridges and enhancing knowledge use and generation across sectoral and regional innovation systems (STRAMBACH, 2008; MULLER and DOLOREUX, 2009).

MARKET CONSTRUCTION IN TERRITORIAL INNOVATION

This evolution from early TIMs to recent models, which highlight complex combinatorial and cross-cutting knowledge dynamics (in sectors, regions, firms, etc.), has been mostly focused on processes occurring upstream to market. While addressing the new 'open' and 'democratized' (CHESBROUGH, 2003; VON HIPPEL, 2005) knowledge flows underlying innovation, models of territorial development usually remain production-centred (MALMBERG and POWER, 2005). While there is a new focus on consumers as 'principal players' providing input and feedback to production

activities, models of territorial innovation are mostly analysed up to rather than within the market (GRABHER *et al.*, 2008; JEANNERAT and KEBIR, 2015).

Although, as cited by BAINES *et al.* (2008), there has been governmental interest in the 'servitization' business model as a basis for value-added competition, most KBE policy has followed this upstream approach and has been geared towards scientific and technological innovation. Downstream market inputs, such as the involvement of end consumers in innovation or the non-technical value achieved through symbolism and cultural values, have been largely neglected.

With such a perspective, the analysis of knowledge processes pays little or no attention to socio-economic market construction and thus provides only a partial understanding of the process. BERNDT and BOECKLER (2009, 2011) observe that although 'market' is a well-referred concept in economic geography, it is often taken as granted and its socio-economic construction often remains unexplored. However, in both orthodox and heterodox frameworks, markets are essential to economic analysis. In the former they function as mechanisms where the supply and demand of goods and services equilibrate at the ideal price. In the latter, markets are regarded as socio-institutional constructions resulting from the coordination of various actors in the production, valuation and consumption of goods or services.

Here, while accepting that markets are a mechanism of information processing about what constitutes economically useful knowledge in a static sense, they can also be thought of as dynamic mechanisms to grow and re-coordinate knowledge (POTTS, 2001). HAYEK (1937) also viewed markets as mechanisms to coordinate knowledge but importantly, as POTTS (2001) points out, in an evolutionary frame knowledge is also the mechanism by which they do so. Thus markets are not just price, selection or information mechanisms but also knowledge mechanisms where, as Potts observes, knowledge itself forms the rules by which the market functions. Considering the market from a socio-institutional viewpoint leads to the idea that it may take various forms of socio-economic organization and reflect particular TKDs. The approach is from this perspective.

PRODUCTION AND STANDARD MARKETS AS A 'HEROIC' FORM OF INNOVATION

STORPER and SALAIS (1997) say the coordination of any economic activity depends on socially defined conventions and mutual expectations amongst actors constituting an 'action framework' or the 'rationalities of behaviour'. They propose four conventions or 'Worlds of Production' (WOPs) derived from the combination of two principal dimensions – technology and production processes and markets. In the former

products are either 'standardized' or 'specialized' and in the market dimension they are either 'generic' or 'dedicated'.

'Standardized' products are defined by industrial standards with competition centred on price and production organized to achieve scale economies. 'Specialized' products rely on restricted forms of know-how and technologies, applied in the realization of product qualities that differentiate them from prevailing industrial standards. Thus competition for specialized products focuses more on quality than price and production is organized to achieve scope and variety. 'Generic' products target aggregated demand rather than the specific demands of individuals. Their qualities are well known to consumers enabling their sale on anonymous mass markets. By contrast, 'dedicated' products target the demands of specific consumers or groups aided by dialogue involving producers, agents, distributors and consumers.

WHITE (2002) and ASPERS (2008, 2009) adopt a cognate perspective on market mechanisms of coordination and innovation. They provide a systemic and dynamic conceptualization where they distinguish different ideal types of market construction that can be used as analytical frameworks to illuminate theoretical and policy models of territorial innovation.

For WHITE (2002) market construction organizes around three sets of relations: between suppliers and producers (upstream relations), between producers and consumers (downstream relations), and importantly, between rival producers resulting from the interpretation of mutual 'signals' (knowledge). When such signals take stable conventional forms, producers reduce uncertainty by positioning their product in strategic niches through mutual comparison. They tend to decouple from single suppliers who apply the same standards and thus provide a similar supply to more than one producer. Also, they decouple from individual consumers whose demand is expressed in an aggregated way. Such a configuration of relationships is spoken of as a production market – as illustrated in Fig. 1. The distinction between producer (trade in intermediary goods) and consumer markets (selling to end users) is not new. However, White also describes the production market as socialized since the firms within it are mutually dependent for continuity of offer and price stability within a system of mutual signals. Producers in this market have little sight of individual end consumers who are seen as providing a relatively predictable aggregate demand.

White's analysis of production markets shares converging concepts with the typology proposed by ASPERS (2008, 2009) who distinguishes 'standard' from 'status' markets. In the former, actors (e.g. producers, suppliers, intermediaries, consumers) coordinate according to standards or shared norms that are explicitly expressed, or at least commonly agreed and identified, to evaluate a good or a service. For example, in the

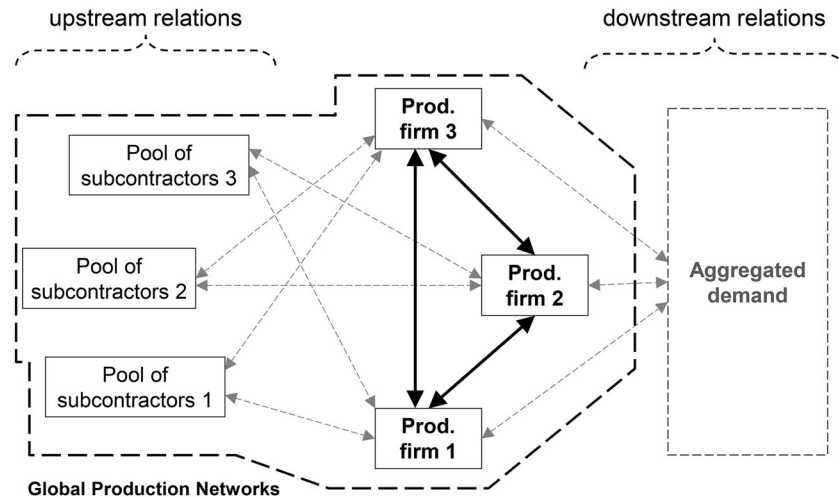


Fig. 1. Relational organization of the production market
Source: Redrawn from WHITE and GODART (2007)

automobile market, these include such parameters as price, longevity, fuel consumption, performance etc. There are also a series of quality (TQ16949) and regulatory standards (e.g., EURO 4/5 emissions) shared by producers and suppliers alike. In this perspective producers and consumers are abstracted from mutual social recognition as their relation is mediated by standards against which they coordinate. By contrast, in status markets the same standards-based rules apply but there are additional rules which are tacit and interpreted via the consumer's experience. These relate to intangibles such as image, lifestyles, individual perceptions and collective representations. Importantly, there are judgments on both sides, buyer and seller, which are status related. Thus status markets connect to consumers directly in a way that standard markets do not.

Even if they do not directly refer to White's and Aspers' models, most important TIMs are conceptualized from the production and standard market perspective. At regional scale the models are perceived as particular production systems that are distinguished through the specification or specialization of local cumulative learning processes. Regional innovation and competitiveness is driven by the process of positioning among the different production systems.

Similarly these models shed light on how regions position themselves as particular production systems within and towards global networks and highlight how particular knowledge exchanges appear between supplier and production regions and how global standards facilitate the establishment of such multi-local relations (COE *et al.*, 2004; HESS and COE, 2006; NADVI, 2008). As with the TIMs, consumption and markets are most often implicitly regarded as aggregated globally and 'decoupled' – to use White's wording – from networks of producers and suppliers organized in interdependent locations (Fig. 1).

The production and standard market perspectives permeate not only theoretical but also policy models

seeking to support the development of the KBE. For example, cluster policies have been based on the distinctiveness of production systems and on upstream processes that drive new ways to innovate. Thus policy agendas often concentrate upon ICT and other technologies and inputs to research and development, while the European Union's main monitoring instrument, the Community Innovation Survey (CIS), is largely geared to upstream indicators and technological innovation. Although the input to innovation from consumers is given high importance in CIS returns, in most instances, especially in engineering sectors, this refers to buyers of intermediate products rather than end users. Few companies surveyed will sell directly to consumers.

The authors are not here seeking to diminish the importance of upstream (e.g. technological) innovation as an economic driver but to recognize that innovation is driven by knowledge changes involving both production and consumption systems and that the ability to find and use knowledge, and to recognize market opportunities, are also important knowledge parameters (JEANNERAT and KEBIR, 2015).

A discussion of innovation outside the 'heroic' or technological model is provided by BLAKE and HANSON (2005) who observe that innovation is contextualized by the social relationships involved in supply and demand as much as by a theoretical market context. It is argued here, in different terms, that this 'heroic' form of innovation, the TIMs themselves and most of the supporting policy framework for innovation and the KBE, are rooted in the production and standard market approach.

The next sections take the example of the global automotive industry and highlight the necessity to examine status markets to understand important innovation and knowledge dynamics in the industry in the UK's West Midlands.

THE GLOBAL AUTOMOTIVE INDUSTRY AS A PRODUCTION MARKET

The industry is multi-technological and multifunctional and in the course of its history has set the paradigms of industrial organization, including assembly line production (Ford) and 'lean production' (Toyota), which has affected the entire value chain (WOMACK *et al.*, 1990). It is dominated by large companies where innovation is mostly incremental and process oriented reflecting the socio-economic maturity of the market and the need to extract maximum returns from production (WOMACK *et al.*, 1990). Thus, the industry is conservative in its approach and the innovation model is 'top down' and proprietary with closed interfaces (JÜRGENS *et al.*, 2010). Nevertheless competition and cost pressures have driven significant technological change such as in fuel efficiency, safety and reliability (MACNEILL and BAILEY, 2010).

Using White's analysis of production markets, it can be observed that car-makers, and their suppliers, operate within a system of quality and cost standards and regulations where comparisons with each are the fundamental benchmarks. The system is illustrated in Fig. 1. The three production firms are competitors but they are also interdependent since they rely on the same suppliers. Hence economies of scale, scope and organization are obtained because each subcontractor is an agent of all three producers (WHITE, 2002; WHITE and GODART, 2007). Similarly the fact that the subcontractors themselves have lower tier suppliers creates a further group of interdependencies. The trend towards consolidation and specialization amongst subcontractors has reinforced these interdependencies by closing down alternative options.

Only the three producers sell directly to the consumer with subcontractors producing intermediate parts and services. In White's analysis, the prime concerns of all the players are focused upstream where the greatest uncertainty and potential hazard exists. Therefore, following the end of the vertically integrated (Fordist) company, maintaining cost and quality control of the upstream system has been the main concern in somewhat of a contrast to the notional market pull system. Market segmentation is largely based on price with firms finding individual niches within the overall level of demand. The Toyotaist paradigm of 'lean' manufacture exemplifies the production market approach. Organizing the system to deliver parts according to quality standards, at the right time and in the right sequence to feed production lines, has become one of the car-makers' main areas of expertise. Much policy has been devoted to helping companies organize the production market.

Mutual rivalry in this situation leads to high levels of conservatism where producers seek to occupy and maintain market niches in which they benchmark against each other. Hence, whilst vehicles have

become more efficient, the basic ergonomics and drive changed little in a century until recent events, both financial and political, began to bring about changes, albeit slowly, to power sources.

THE AUTOMOTIVE INDUSTRY IN THE UK'S WEST MIDLANDS: CONSTRUCTING A STATUS MARKET

While markets can be conceptually analysed as 'standard' or 'status', in practice they incorporate both dimensions to a greater or lesser degree. Thus brand and image are important to commodity (volume) producers as much as to builders of premium or performance vehicles. Next the case study in the UK's West Midlands is examined where a transition can be observed from the former to the latter as the industry changes.

Located in the central area of England, the UK's West Midlands is a longstanding area of global motor industry production. Its heyday was in the early 1950s but, in the following decades, with open trade rules and globalization, the regional industry was unable to compete and production declined. The reasons behind the demise have included lack of investment, managerial failings, poor labour relations, global competition and pressures of cost recovery (HOLWEG and OLIVER, 2005; BAILEY, 2007; BAILEY *et al.*, 2008) alongside recent migration towards lower cost locations (HOLWEG, 2009). The end of volume activity came with the closure of the Rover and Peugeot plants in 2005 and 2006 respectively. However, in parallel to the decline in volume manufacture, there has been a growth of higher-value niche or specialist production, high-value engineering and development services (DONNELLY *et al.*, 2005). Companies include large producers, such as Jaguar Land Rover, medium-sized companies businesses, such as Aston Martin, and small-scale producers, such as the sports car producer Morgan Motors. Many other businesses, such as the electric car developer Zytec, have developed from the motor sports sector. There is also a growing base of KIBS ranging from major international businesses like TRW, Ricardo and MIRA to small and medium-sized companies like Zytec and Prodrive (see MACNEILL and BAILEY, 2010, for a summary).

Thus the region's automotive industry, which was uncompetitive within the producer market, is now, with reduced volume, operating more within consumer-based status markets. BAILEY and MACNEILL (2008) discuss this shift adapting the STORPER and SALAIS (1997) framework. As discussed above, in status markets, the same standards-based rules apply but there are additional informal rules relating to consumers' imaginations, lifestyles and individual perceptions. This has three implications. Firstly, there is a direct interaction with consumers which is more individualized

than aggregated as in a standard market. Secondly, price competition becomes less dominant giving room for innovation throughout upstream market relations. Thirdly, as will be discussed in the case study, there is a more varied and significant role for downstream market relations which goes beyond conventional advertising, distribution and sales.

A shift towards a status market reduces cost sensitivities and provides opportunities to extract higher value throughout the supply matrix. Scale economies are reduced in importance and innovations, such as the novel construction techniques, are possible. As discussed in the next section, this shift also involves a set of privileged upstream and downstream relations drawing on and leading to a set of new knowledge dynamics.

WEST MIDLANDS' LUXURY/SPORTS CAR INNOVATION

Research methodology

The empirical study presented in this section draws on research that took place in the European Commission FP6-funded project EURODITE (Contract No. 006187). The specific firm-based knowledge dynamics investigated were around the development, construction and promotion of new sports and performance vehicles nested within the overall TKD described above – the shift in the nature of the regional automotive industry from a concentration on the mass (commodity) segment to niche or luxury (premium) manufacture. The research was based on constructing knowledge biographies (BUTZIN, 2009) of major innovations in vehicle development, production and marketing undertaken by of two West Midlands-based luxury and sports car-makers.

In brief, a cascade, or snowball, method was used. Starting at managing director, chief executive officer or director level, discussions were held within the car-makers to identify a major innovation and then traced its origins and development through a series of further interviews. At each point it was sought to ascertain the 'where and whom' of the innovation story and then to proceed to interview the main actors identified. While recognizing the role of the firm, as the point at which innovation (exploitation of ideas) occurs, the network uncovered is not centred on any one firm's internal or external interactions. It is therefore not constrained within geographical (TIMs) or technological innovation systems. The 'trails' were able to lead to both upstream and downstream interactions and thus reveal a 'holistic' map of innovation influences both within the sector and from firms operating in parallel markets.

Interviews were carried out between September 2007 and August 2008. More than 50 were conducted with personnel in the car-makers themselves and with those in upstream knowledge networks, co-developers

of the innovations, other suppliers, knowledge providers, universities and KIBS (e.g. engineering consultants), and downstream marketing functions including car-makers' marketing departments, racing teams, KIBS (e.g. event's organizers) and dealerships.

Constructing the status market through privileged downstream relations

The downstream networks are illustrated in Fig. 2. They comprise a diverse group of both proximate and distant players including racing teams and promoters, sponsors, organizers of promotional events, media organizations and other partners. Innovations in design and vehicle engineering are tested through GT racing activities and therefore connect directly to consumers given that (unlike grand prix cars) GT cars are versions of standard production cars. Racing activities represent testing but also promotion of road vehicles. This close relationship is illustrated by the outsourcing relationship of one manufacturer to an engineering KIBS that prepares the official (works team) GT1 cars and manages the race team and logistics. The same firm also modifies and sells cars to private teams for GT2–4 classed events and has a secondary business maintaining these vehicles. Thus, the activity of reinforcing brand image through racing is turned into an income stream in its own right. As a result the activity is itself economically viable. Unlike the significant expenditure by major manufacturers for grand prix racing, here the parent company provides no budget for racing.

Sales of road cars are thus assisted by the symbolism created through racing events and associations of image. This is backed by 'placements' in the media, particularly in the 'up-market' and lifestyle press exposing consumers to symbolic knowledge aspects such as brand image and lifestyle. In addition, corporate hospitality, for example at racing events, involves selected consumers directly. The knowledge and experience of these 'involved consumers' is fed back into future innovation in a more direct way than could be realized through surveys or focus groups. Further involvement of the KIBS sector is seen in the organization of the promotional events and organization of hospitality. The metaphor of lifestyle is further reinforced by a connection to other luxury commodity sectors, such as watches, champagne, clothing and luggage which are jointly branded at racing and other corporate events.

The knowledge base for innovation in these case studies is significantly broader than either analytical or technical knowledge in the upstream supply base or within the companies own resources. Downstream innovation and the role of symbolic knowledge is clearly an important and integral part of the overall innovation process and one which goes beyond just branding or promotion. The studies also illustrate a direct connectivity to consumers. Rather than being seen as simply providing an overall aggregate demand, they are

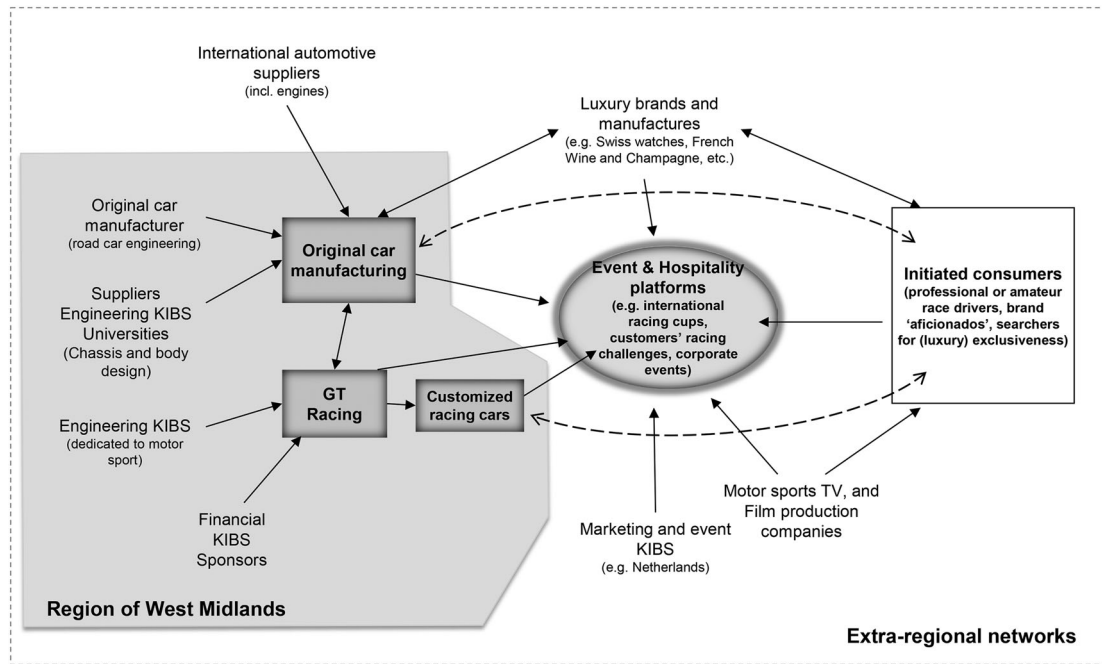


Fig. 2. Downstream knowledge and innovation networks in the development of a new sports car

Source: Authors

engaged as personalized resources in the innovation process; that is to say, consumers are knowledgeable players able to understand and recognize the technical and cultural value of the product. This implies two particular downstream knowledge dynamics:

- Initiating and engaging end-consumers into learning about the cultural value of the car. This is done through racing and related symbolic knowledge creation. Racing acknowledges a particular status (e.g. history and reliability). It also implies associating other producers with similar status to this initiation process (e.g. the association with other luxury brands such as Jaeger LeCoultre watches at the Le Mans 24-hour race).
- Particular technical development related to the expected status of the brand (racing technology and or particular relations with other luxury products), i.e. there should be coherence between the technological and symbolic aspects of the innovation process.

Status as resource for privileged upstream relations

The upstream network around the genesis of a new car from a particular manufacturer is shown in Fig. 3. Illustrated here is the designing, testing and producing of a new aluminium chassis used ultimately on three models from rival companies – Jaguar, Aston Martin and Morgan – plus the firms involved in the design and development of a new body shell. The interactions were ostensibly highly codified since they involved computer-based design and modelling. Nevertheless a considerable level of shared background and tacit knowledge is observed

amongst the players that went beyond the shared knowledge base amongst a community of practice.

Fig. 3 illustrates the most significant companies and organizations from concept to finished product. It is notable that although the study details a major innovation, the knowledge networks involve a small number of players that are mostly embedded in the West Midlands automotive innovation system and have a high degree of trust and ‘closure’ (GRANOVETTER, 1992). This is exemplified by the fact that much of the initial work on shaping both the chassis and the body was done on a voluntary and unpaid basis.

Using an analysis based on knowledge flows amongst the proximate firms one might consider a contrast between what have been termed ‘local buzz’ and ‘pipelines’, where the former has higher tacit knowledge content. However, both types of knowledge are intertwined throughout. Local networks concerned a codified activity, computer engineering, albeit that interactions had a high tacit content with the involvement of KIBS, universities, local toolmakers and manufacturers as well as the principal companies. The more distant network interactions related to specialized enabling technologies and to the supply of engines and transmissions. A significant codified element was tuning the ‘set-up’ of the vehicles to engines and transmissions from German-based companies using long-distance connections to these suppliers’ software. However, there was a strong shared tacit knowledge base, for example, where testing was carried out via a shared enthusiasm for racing (LAWRENCE, 2008).

Using the market-based analysis it can be seen that presence in a status market enables the development

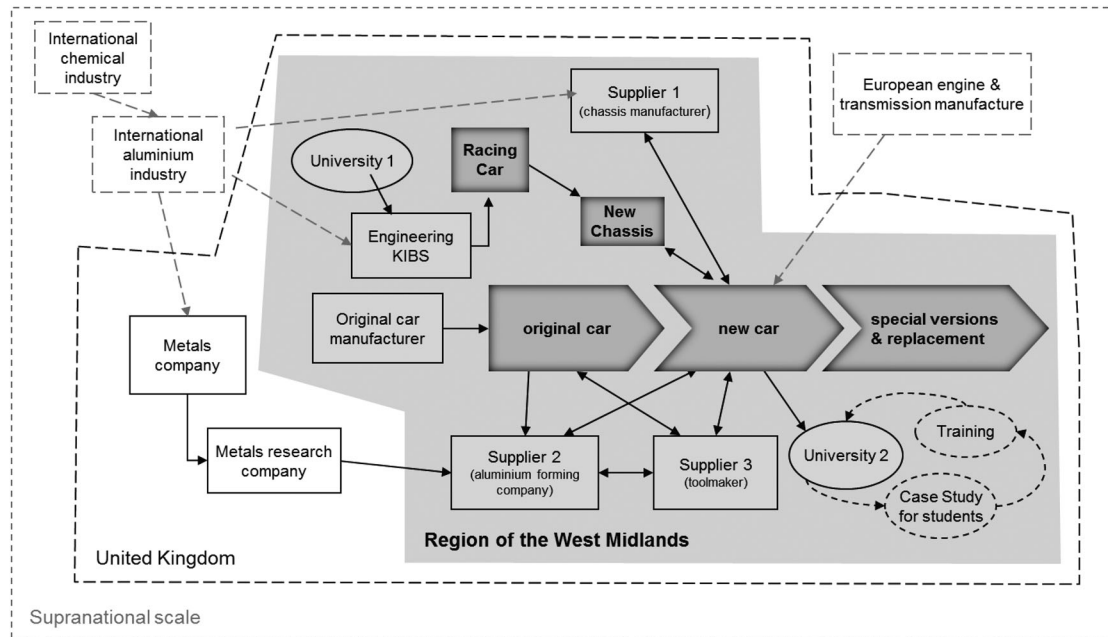


Fig. 3. Upstream knowledge and innovation networks of a West Midlands-based sports car manufacture
Source: Authors

of particular modes of relations. For example, the chassis and body development presented here involved innovative but expensive techniques though interactions that were based on shared enthusiasm, recognition and understanding of status rather than cost. It can be argued that downstream privileged relations between producer and consumer result in upstream interactions which build on mutual social recognition (loyalty and status) rather than on technical mediation (standards) leading to potential new knowledge development.

Shared innovation in status markets

The business model described bridges the gap between the production market (WHITE, 2002) and the consumer. The status market thus has a similar role to the production market in sifting, testing and augmenting knowledge. Knowledgeable consumers represent a considerable asset as a knowledge pool. Through the downstream aspects innovation model, companies are able to draw on this pool while, at the same time, connecting consumers to their own and other sectors' products. In this sense, the construction of status within markets implies extending comprehension beyond a pure production market perspective. This extension can be related to three particular knowledge dynamic and territorial dimensions highlighted by the dotted ovals in Fig. 4. Broadening the original arguments on 'servitization' (BAINES *et al.*, 2008; AINES and LIGHTFOOT, 2013), this section describes services that provide consumers with 'experience', 'image' and a 'sense of belonging' that are less tangible than other cited examples, but nevertheless actual.

Firstly, critical relations can be identified around downstream links concerned with creating proximity relations with consumers who are initiated to the status value, for example, through invitations to events, factory or museum visits etc. Knowledge sharing is about the common social and cultural values that both producers and consumers generate and use to assign a particular quality to the market goods. Rather than questioning whether knowledge flows from or to consumers in this market relation, it appears more pertinent to analyse how knowledge sharing contributes to value and a commonly recognized and legalized status. For instance, the experience of visiting a traditional handcraft car manufacture or the experience of attending a race event makes the consumer more knowledgeable about the values promoted by the producer. Becoming an 'initiated connoisseur' (JEANNERAT, 2013), impacts, in turn, on the knowledge generation of producers engaged with the common values. Thus combining a new material or a new technology with a traditional industrial element of handcraft, design or processing is recognized or 'known' as authentic by consumers.

A second and new set of links appears between the production firms A and 1 (Fig. 4). Here these could represent local links, as examined above, between the original car-maker and the engineering KIBS producing racing cars of the same brand. Both producers have direct connections to consumers, and their knowledge, enabling iteration and joint innovation based upon consumer feedback. Alternatively, the oval might encompass multi-local links with other production systems given their involvement in the joint system of promotion. Thus production firms A and 1, originally

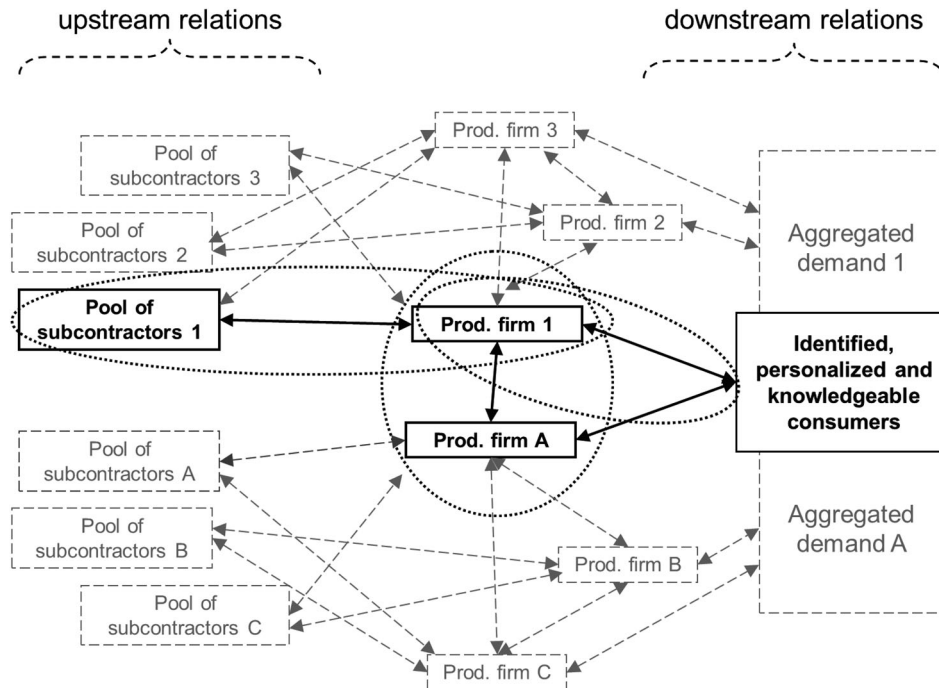


Fig. 4. *Privileged status market relations within global production markets*
 Source: Inspired and adapted from WHITE and GODART (2007)

embedded in different markets, may engage in joint promotion and innovation and thereby realize the same benefits of connectivity. Such an example can be observed in joint promotion between luxury car-makers and Swiss watch manufacturers and the joint development of new designs and livery. Similar 'horizontal' links between multi-sectoral producers had already been emphasized in the case of the Australian Fashion Week by WELLER (2008) to advocate the need to go beyond a narrow approach to GPNs. The analysis shows that cultivating common knowledge and values with consumers can motivate shared innovations in upstream market relations.

Thirdly, the network of upstream links, and privileged relationships with a local pool of suppliers, were described above. In White's interpretation, a local (re) coupling of the producer-supplier relationship between the pool of subcontractors 1 and the production firm 1 can be observed (Fig. 4). Such relations are common in the industry and are seen as bringing cost-saving benefits. However, they are normally located within a system of power-based and competitive tendering purchasing. In the case study this *upstream* local embedding is enhanced by the fact of privileged *downstream* market relations maintained between privileged producer and consumer. Thus overall network cooperation and coordination is addressing, co-developing and maintaining an economically valuable status. In these reciprocal market relations, the acquisition, sifting and utilization of knowledge thus takes place in all market elements. It can be argued that privileged upstream knowledge dynamics may lead to privileged downstream relations

and vice versa. In the case of the sports car industry in the West Midlands region, innovation develops at the crossroads of these intertwined market relations through the local capacity to anchor knowledge which circulates across different places and sectors.

DISCUSSION

The case study illustrates the networks involved in innovation, branding and promotion of luxury and performance cars in the UK's West Midlands. The interactions detailed arise within a significant knowledge dynamic, namely the move of the region's automotive industry towards higher-value engineering and production or, in other terms, a move from a position largely within a standard market to one within a status market. The change radically impacts on the innovation paradigm engendering a series of privileged relationships through a common understanding of positioning within the status market. In upstream production and purchase of intermediate goods, this positioning is based on commitment, experiment and extraction of higher value than is usually associated with the standard market model.

Within downstream networks, a similar shared understanding with agents and consumers is evident. A similar pattern is clear with a mix of localized mostly tacit and shared knowledge where adaption, development and reworking is common. There are also distant standardized knowledge relations such as the organization of events. While the organizing agents clearly have their own tacit knowledge base, this does

not need to be shared with the car manufacturers – or indeed with the makers of other, co-promoted, luxury items. Here a complex interaction of racing, events and joint promotion alongside other luxury goods, embeds intangible, but at the same time commonly understood, values in the minds of consumers and agents. Further, the same intangible values can be seen to be shared by the upstream suppliers.

The hybrid nature of manufacturing and services, as well as the concept of servitization, here extends to a range of other products that add to value and image – and the lifestyle into which the consumer is buying. This overlap and synergy between manufacturing and services is clearly illustrated in the network maps. Within status markets the interaction with consumers is a privileged one where consumers are not only personalized but also are seen as ‘knowledgeable’ and from whom additional innovation can be either initiated or tried and tested. Thus innovation occurs throughout the whole network and arises from symbolic or metaphor-based knowledge as well as from scientific and engineering-based knowledge. A new area of servitization can thus be identified where the service provided to the consumer is based on symbolism rather than tangible action.

The TKDs investigated illustrate the importance of KIBS at various points in the networks, reflecting the degree of tacit knowledge locally shared with the car producers. For example, GT racing is regionally organized since it draws on a shared understanding of a range of upstream (e.g. technology) and downstream (e.g. image promotion) activities. In addition, a manufacturing company and an engineering KIBS are seen to be working together to provide ongoing maintenance, repair, logistics and promotion. As with the spatial relationships involving ‘upstream KIBS’, a contrast can be made between standardized activity related to international branding, promotion and marketing of luxury goods and the localized specialist KIBS bringing knowledge and support to image building with a close relationship to manufacturing itself.

POLICY CONCLUSIONS: TOWARDS A STATUS INNOVATION POLICY APPROACH

The analysis provides a broadened perspective on knowledge dynamics in the KBE from a particular reflection on market construction. By highlighting the difference between standard and status markets, this paper has bridged between territorial models of innovation and socio-economic models of market construction. Based on Aspers’ and White’s typologies, it can be argued that the former models express an upstream perspective of market organization based on (technical) standards and a strategic niche positioning of local production systems related to globalized and ‘aggregated’ consumption.

Inspired by such models, policy initiatives have been mostly oriented to upstream processes and technological

knowledge dynamics specified and specialized at a local/regional level. More recently, theories have paid increased attention to multi-local and multi-scalar relation occurring within GPNs. However, regional economies and innovation still remain mainly conceptualized on technological improvement and efficiencies of cost, quality and delivery with the same models applied across different sectors. Many regional policy initiatives, such as the West Midlands Accelerate Programme (MACNEILL *et al.*, 2009) and the Styrian Cluster Programme (MACNEILL and STEINER, 2010), illustrate this point.

The case study shows that it is important to acknowledge the close relationships between manufacturing and services and the potential for innovation within downstream networks. The provision of services can be a route by which manufacturing firms can create additional value from added capability (BAINES *et al.*, 2008). For policy-makers, supporting downstream services, and the integration of upstream and downstream activities to assist innovation appears as a pertinent avenue to maintain a manufacturing base in developed economies.

While traditional innovation policy tends to support value creation through upgrading production activities (including higher value products), it is suggested that status innovation policy (SIP) should consider value creation also as a fundamental process of social recognition and understanding. In this view, SIP embraces a wide perspective involving consumers and intangible services creating or enhancing lifestyle metaphors. Involving consumers does not necessarily mean considering them as an input to innovation but rather as knowledgeable players able to interpret and co-construct the socio-economic value of regional innovation systems.

Such a policy cannot be achieved with a single instrument but should consider innovation support as a policy mix. However, conceptualizing SIP would provide a framework within which to combine policies hereto considered separately by public authorities. As such it proposes an integrative umbrella able to support different types of knowledge bases by bringing together aspects of cultural and technological innovation, service and manufacturing activities plus consumption and production spaces.

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