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Gatekeepers of creativity: the case of the Swedish film industry

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Abstract

Gatekeepers of creativity: the case of the Swedish film industry Su-Hyun Berg Department of Social and Economic Geography su-hyun.berg@kultgeog.uu.se Year of enrolment 2012 Expected final date 3rd.June.2016 Supervisors: Dominic Power and Johan Jansson In a globalizing knowledge-based economy, ability to access external knowledge sources and talent pools is crucial in helping to create innovation (Maskell, Bathelt and Malmberg 2005; Cooke and Leydesdorff 2006; Asheim and Gertler 2005; Morisson 2008). Bathelt et al. (2004) argued that successful clusters are characterized by actors that generate innovation by drawing on specific local knowledge, combining it with external knowledge components. In this way, local 'buzz' is linked to global 'pipelines' (Bathelt et al., 2004; Storper and Venables, 2004). Recent studies in economic geography and international business have employed this buzz-pipelines perspective to analyze the dynamics of creative industries. (See for instance, Lorenzen and Mudambi 2013; Balland et al. 2013; Vang and Chaminade 2007; Bathelt 2005: Bathelt and Gräf 2008) While the authors stressed that internal and external knowledge flows in creative industries play an important role, the existing literature provides few insights into the key actors of this process and their functions concerning the process of knowledge adoption and diffusion within industrial districts. The aim of this paper is to identify and investigate the main actors of Swedish film industry and their functions involved in these knowledge adoption and diffusion processes. In other words, the major goal is to examine who access external knowledge and how they share external knowledge within the local system. The theoretical framework draws on the concept of 'gatekeepers (Allen 1977)' of knowledge, which provides novel insights into the knowledge sourcing and diffusion processes. Knowledge gatekeepers are the agents who manage the local–global interface of co-localized groups of industrial units. Gatekeepers provide each of the agents with a connectivity function that enables them to access to external knowledge and diffuse external knowledge within localized industrial units. This analytical lens is applied to investigate managers of Swedish film industry in Stockholm. Over recent years, Scandinavian crime fictions have captivated not only Nordic audiences (Denmark, Finland, Iceland, Norway and Sweden), but also global audiences. This phenomenon is known as "Nordic Noir" (Peacock 2014) and is characterized by bleak, dark and morally complex mood. This international recognition is inevitably linked to the power relationship, interactions, dynamics and milieu of the network in the Swedish film industry in Stockholm. The analysis is based on a selected sample of managers for film production in Sweden. In-depth, semi-structured interviews were conducted with six managers working for commercial film production in selected firms. After identifying the major actors of external knowledge sourcing processes, this paper analyses how these key actors acquire external knowledge and apply them into the local

systems. In line with several studies that have highlighted strong linkages with external knowledge flows as a key to an industry's economic performance (Amin and Cohendet 2004; Grabher 2002b; Owen-Smith and Powell 2004; Scott 2006; Visser 2009), this study finds that main key actors of Swedish film industry devote best efforts to tap and diffuse knowledge coming from external sources. In addressing the complexity of knowledge production and diffusion mechanisms underlying feature film production, a detailed micro-level analysis of the functions involved in these processes was carried out. It is shown that managers undertake extensive investigator role for screening trends, fashion and fad. In addition, it is shown that mangers have an explorer function for building global pipelines in order to access external knowledge flows. Moreover, managers have a gatekeeper function as they direct knowledge adoption and diffusion processes within the industry. The findings provide further evidence that production managers play a central role in knowledge production and diffusion, not only because they are at the center of film production process, but also because mangers access to multiple-level networks of information and knowledge. The paper adds two main contributions to the extant literature. On conceptual grounds, it helps to qualify the role and function of managers as knowledge gatekeepers in the film production. Research on learning and innovation of cluster has flourished since 1990, and the emphasis recently has been on understanding how local learning processes through (global knowledge pipelines (Bathelt et al., 2004). Recent studies on gatekeepers reflect this growing interest on technology gatekeepers (Giuliani and Bell 2005; Hauge 2006; Boschma and Ter Wal 2007; Morrison, 2008; Rychen and Zimmermann 2008; Graf 2011). Very little research has been undertaken on the dynamics of gatekeepers (for an exception, see Graf and Krüger 2011). This paper progresses the research by looking at the knowledge gatekeepers in the creative industry. On methodological grounds, the paper proposes an operational method to quantify the importance of managers in mediating knowledge flows across networks that emphasizes the effects of individual activities and interactions. Differently from most of the literature on the subject, this paper has adopted an actor-based perspective and discussed how production managers involved in the knowledge adoption and diffusion processes. This perspective, hopefully, will be useful and deployed in future research. This analysis is set within specific empirical and methodological limits. The first limitation concerns that this research is an explorative single industry study. The generalization of its results is therefore bounded by the specificities of the film industry. The second limitation refers to the limited number of interviews carried out. Anecdotal evidence about multifunctional managers is not sufficient to generalize entire industry actors and their cross functions. Final limitation is that this study does not analyse the gatekeeping role of public institutions (Swedish film institutions, regional film funds, public research organizations, etc.) Overall, the three limitations above represent equally promising avenues for further research.

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<u>Note to the reader</u>

I'm a PhD student in 4th year and this is my fourth paper for the thesis. It is a manuscript based on my field-work in Stockholm. It deals with the micro perspective on Swedish film industry, in particular managers' multiple role in the network of the industry. Since it is an early draft, I would be grateful if you could provide some comments on the following points:

-Match between theoretical concepts and empiric
-Methodological approach
-Discussion arguments

Of course, any other feedbacks would be greatly appreciated.
    Thank you!

Abstract

Over recent years, Scandinavian crime fictions have captivated not only Nordic audiences (Denmark, Finland, Iceland, Norway and Sweden), but also global audiences. This phenomenon is known as "Nordic Noir" (Peacock 2014) and is characterized by bleak, dark and morally complex mood. This international recognition is inevitably linked to the power relationship, interactions, dynamics and milieu of the network in the Swedish film industry in Stockholm. While many studies (for instance, Dahlström and Hermelin 2007; Power 2002) have investigated the success of the Swedish film industry, little attention has been paid to managers' role in the network of the industry. Therefore, the main aim of this research is to identify the manger's role in the network ecology of the Swedish film industry. The analysis of the semi-structured interviews and filming site observations confirm that the multiple functions of manager in the Swedish film industry. First, managers have a function as investigator screening trends, fashion and fad. Second, mangers have an explorer function building global pipelines. Third, managers have a gatekeeper function as they direct external knowledge sourcing and partners.

1. Introduction

In a globalizing knowledge-based economy, ability to access external knowledge sources and talent pools is crucial in helping to create innovation (Maskell, Bathelt and Malmberg 2005; Cooke and Leydesdorff 2006; Asheim and Gertler 2005; Morisson 2008).[i] Bathelt et al. (2004) argued that successful clusters are characterized by actors that generate innovation by drawing on specific local knowledge, combining it with external knowledge components. In this way, local 'buzz' is linked to global 'pipelines' (Bathelt et al., 2004; Storper and Venables, 2004). Recent studies in economic geography and international business have employed this buzz-pipelines perspective to analyze the dynamics of creative industries. (See for instance, Lorenzen and Mudambi 2013; Balland et al. 2013; Vang and Chaminade 2007; Bathelt 2005: Bathelt and Gräf 2008) While the authors stressed that internal and external knowledge flows in creative industries play an important role, the existing literature provides few insights into the key actors of this process and their functions concerning the process of knowledge adoption and diffusion within industrial districts.

The aim of this paper is to identify and investigate the main actors of Swedish film industry and their functions involved in these knowledge adoption and diffusion processes. In other words, the major goal is to examine who access external knowledge and how they share external knowledge within the local system. The theoretical framework draws on the concept of 'gatekeepers (Allen 1977)' of knowledge, which provides novel insights into the knowledge sourcing and diffusion processes. Knowledge gatekeepers are the agents who manage the local–global interface of co-localized groups of industrial units. Gatekeepers provide each of the agents with a connectivity function that enables them to access to external knowledge and diffuse external knowledge within localized industrial units.

This analytical lens is applied to investigate managers of Swedish film industry in Stockholm. Over recent years, Scandinavian crime fictions have captivated not only Nordic audiences (Denmark, Finland, Iceland, Norway and Sweden), but also global audiences. This phenomenon is known as "Nordic Noir" (Peacock 2014) and is characterized by bleak, dark and morally complex mood. This international recognition is inevitably linked to the power relationship, interactions, dynamics and milieu of the network in the Swedish film industry in Stockholm. The analysis is based on a selected sample of managers for film production in Sweden. In-depth, semi-structured interviews were conducted with six managers working for commercial film production in selected firms. After identifying the major actors of external knowledge sourcing processes, this paper analyses how these key actors acquire external knowledge and apply them into the local systems.

In line with several studies that have highlighted strong linkages with external knowledge flows as a key to an industry's economic performance (Amin and Cohendet 2004; Grabher 2002b; Owen-Smith and Powell 2004; Scott 2006; Visser 2009), this study finds that main key actors of Swedish film industry devote best efforts to tap and diffuse knowledge coming from external sources.

The paper is structured as follows. In Section 2, I review the literature on the process of knowledge adoption and diffusion within industrial districts. Section 3 provides information on my methodological approach. The central part of this paper is Section 4, where I analyse the manger's role in the network ecology of the Swedish film industry in terms of their activity as investigator, explorer and gatekeepers. The final section offers some concluding remarks and outlines directions for future research.

2. Theoretical frameworks

In recent years, there has been a significant shift in the research interests and methodological approaches of many economic geographers: the focus of long debate on industrial districts and clusters has shifted to knowledge related issues (Boschma, 2005; Malmberg and Maskell, 2002; Bathelt et al. 2004). Broadly speaking, creating, (re)combining, circulating, and sharing existing and new knowledge through an interface between local and global knowledge systems is at the heart of innovation process. Highly localized and specialized knowledge creation processes are especially encouraged within industry clusters (Asheim and Gertler 2005; Bathelt 2005; Porter 1990; 2000; Owen-Smith, and Powell 2004). Cluster refers to dynamic interrelated networks of industrial activities at the regional scale as a whole, and highlights the benefits of co-location in many ways, whereas networks represent strategic cooperation in the form of knowledge exchange between firms and other actors that may, but need not, develop these links at the local level (Visser 2009, 190). Co-location and face-to-face contacts within a cluster give rise to a particular information and communication ecology, which is denoted as 'industrial atmosphere' (Marshall 1927), 'noise' (Grabher 2002a; 2002b), 'local broadcasting' (Owen-Smith and Powell 2004) or 'local buzz' (Storper and Venables 2004; Bathelt et al., 2004; Bathelt 2005; 2007).

Whilst various cluster-related studies overemphasized "localized knowledge" (e.g., Scott; 1988, Saxenian 1994; Grabher and Powell 2004) and are criticized neglecting the importance of external linkages. Recently, number of studies have begun to stress strong linkages with external knowledge flows as a key to a cluster's economic performance thereby shape distinctive competitive Bathelt et al. (2004) referred to 'pipelines' in order to point out the global linkages of a cluster (Bresnahan at al., 2001; Boschma and Martin 2007: 541).

In this respect, scholars with a wide range of empirical and theoretical interests have emphasized generating novelty by drawing on as sources of innovation. The recent literature pointed out gatekeepers as mediators of the local and external knowledge exchange (Giuliani and Bell 2005; Morrison 2008; Graf 2011; Malecki 2010; Rychen and Zimmermann 2008).
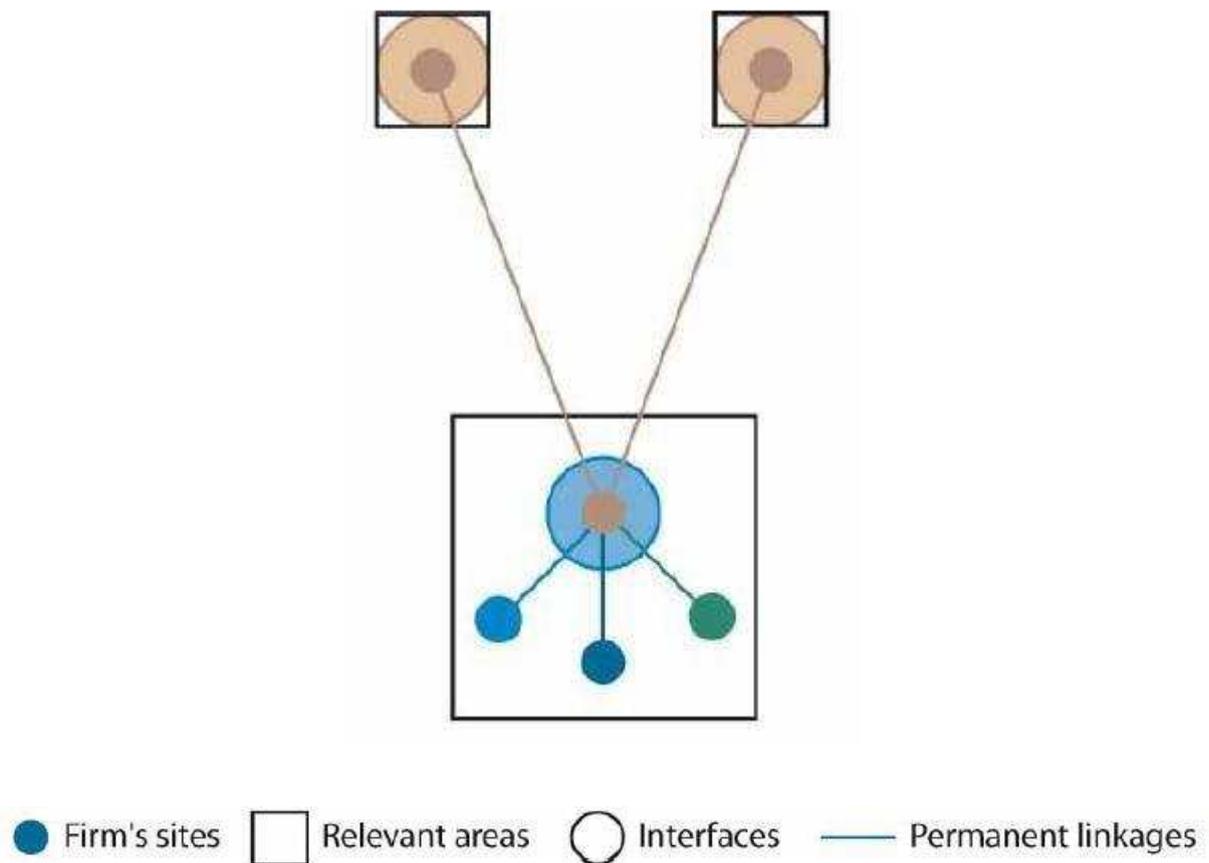

Figure 1. Gatekeeper configuration of network

Source: Rychen and Zimmermann (2008)

Figure 1 illustrates the way local firms coordinate to access external resources through an actor who is well-embedded in global networks by way of intra- as well as of inter-firms links. The 'gatekeeper' network is largely based on the optimization of information management with respect to local and global knowledge flows. It stems from the concept of technological

gatekeepers (Allen 1977), whose function is to link 'their organizations to the technological world at large', particularly in relation to 'the problem of communication in technology' in a context of R&D organizations. Allen (1977) first introduced the term 'technological gatekeeper' to refer individuals who accesses to external sources of knowledge by establishing unique linkages with outside actors and, more importantly, ensure knowledge absorption and diffusion within their proximate working and social environments (Maskell and Malmberg1999; Freel 2003; Breschi and Lenzi 2015). In regional studies setting, gatekeepers are generally intended as individuals (and sometimes organizations) that enable knowledge transfer among different spatial levels- industrial clusters, cities or regions. Gatekeepers are often regarded as crucial actors to overcome any communicational impediment that may arise in extra regional knowledge exchanges owing to their following two key intermediate roles (Giuliani and Bell 2005; Graf 2011; Morrison et al.2013).

First, they interconnect internal and external resources that enable local players to benefit from their own external relations, at the same time, giving external players access to local resources. Second, they play an essential role of internal coordination, activating the local networks and animating of local skills. Gatekeepers facilitate local firms to enjoy benefits from geographical proximity effects, while building access to locally lacking resources or to external markets. Knowledge gatekeepers operate selective diffusion strategies because the network they create must also contribute to their own productive efficiency. In this regard, gatekeepers not only search for and assemble related knowledge outside their proximate industrial environments, but also are able to transform this knowledge and diffuse it within their organizations and industrial districts. Integrating the external knowledge into the local knowledge base requires the absorptive capacity (Cohen and Levinthal 1990: 128) that is an ability to value, assimilate, and utilize new external knowledge. Gatekeepers are acknowledged as best positioned actors to dispatch the external knowledge at the local level by (re)interpreting, coding and separating it into pieces so that can be easily understood,

processed and used by others owing to the same specialized language and symbolic representations. It reveals that firms located in a cohesive social environment in where they share common values, rules and languages (Saxenian 1994). In sum, gatekeepers play intermediary role to value, assimilate, and commercialize new, external knowledge in an innovation system. Gatekeepers have long been described in research on creative and cultural industries (Bystryn, 1989; Caves, 2000; Hirsch, 1972, 2000, Foster et al. 2011). These studies have examined how gatekeepers manage ambiguity in the music co-production process (e.g. Foster et al. 2011), use their roles in referral and support networks among artist, audience, and investors. (De Roeper 2008)—as well as promote producers to manage uncertainty (Bielby and Bielby 1994) or garner awards (Allen and Lincoln 2004).

However, most of the above-mentioned studies focus on performing arts, and thus have limitations in explaining the dynamics of film industry. The main research object therefore is to analyze and explain the dynamic roles of managers in creative industries. I hence attempt to utilize this approach in analyzing the multifunctional managers in Swedish film industry and the evolving cities and regions with diverse actors and institutions.

3. Methods

This study is based on extended fieldwork in Stockholm between February and May 2015. In total, 2 filming sites were visited, 55 film experts were interviewed (Table 1) and 8 hours of audio were recorded. Some participants were experienced line managers of film production with more decades of experiences. Others interviewed were international film festival's chair, Head of Press at the Swedish Film Institution (SFI) and Professor of film studies in Gothenburg. Unless otherwise noted, all quotes in this paper are from these interviews.

Table 1. List of informants in the Swedish film industry

Source: Source: Survey by the Author

Functions	Nr. of informants
Professors in communication and media studies	3
Line production managers	6
Executive production mangers	3
Sponsoring coordinator	1
Director	2
Production leader	3
First Assistant Director	1
Second Assistant Director	1
Production coordinator	2
Casting	2
Site managers	5
Photographer	3
Video editor	2
scriptwriter	1
Site assistant	4
Audio manager	2
Scenography	3
Property manager	5
Custom and make up	6
Screen writer	2
Total	55

Prior to the main fieldwork, 9 exploratory telephone interviews were conducted with film

industry experts to obtain in-depth knowledge of the Swedish film industry and the contextual

and cultural background to the film industry in Sweden. At the beginning of the field work, 46 film workers were interviewed including production coordinator, script writer makeup artists and photographers in order to identify the key actors of film production. 8 interviews were recorded and transcribed. The other interviews were not recorded as the informant didn't agree to have their interviews recorded. In these situations, I tried to take systematic notes and complete them after the interview was over. On average, the interviews took about 60 minutes. Interview questions were categorized into six sections: 1) basic information, 2) Location, 3) Career development histories, 4) Relationship, 5) Co-production experiences and 6) International film festivals. Desk research was also undertaken during the film work period. The website of SFI, The Swedish Film & TV Producers Association and Film i Väst (a regional film fund located on the Swedish west coast in Västra Götaland) provide achieves and analysis of Swedish film, photographs and collected interviews with prominences. In addition, I visited two filming sites of the film "Modus Operandi" in Stockholm. Total 10 hours observation was conducted but 23 on-site-interviews were not recorded due to the restriction of security. I also took systematic notes and completed them after the observation.

4. Empirical insights

This empirical study is contextualized in the Swedish film industry. According to Swedish definition, film industry belongs to the creative industries that "people and companies with a creative approach to create and/or deliver experiences in some form (Nielsén and Daal 2008: 17)." Power and Gustafsson (2005) pointed out that Swedish film production is integrated into an international and globalized system. Swedish film and filmmaking, led by well-known directors such as Ingmar Bergman and Lasse Hallström, has long enjoyed international

recognition. In particular, Ingmar Bergman remains one of Sweden's most well-known cultural figures and his work as a director and scriptwriter continues to inspire audiences and filmmakers over 60 years. Swedish film offering wide-ranging genre including comedy, drama, fairy tales and crime thrillers. There have also been outstanding achievements in crime series. As Stieg Larsson's Millennium Trilogy as a prominent example, the subsequent popularity of Swedish crime fiction as well as television drama series including Killing (2007) and The Bridge (2011) has termed the Nordic noir genre. This context is particularly suited to the present research because, as a result of this expansion of Swedish film industry, connections with external (both foreign and national) knowledge and technologies have been vital.

Traditionally, Stockholm has been the center for film production in Sweden. Stockholm is the capital city and major urban region of Sweden. 90 of 125 Swedish film production companies are located in Stockholm in the year of 2015 (Swedish film and TV producers Association). This concentration of film production in Stockholm is understandable for the following reasons; 1)the agglomeration of the national institutions for culture, for instance, the national theatre, Swedish Film institution (SFI) and Stockholm Film Commission, 2) the major educational institutions such as Stockholm Academy of Dramatic Arts (SADA), and 3) easy access to resources such as studios and skilled expertise.

Swedish film production is governed by the Swedish Film Agreement between the state and the film industry. The initial idea behind the agreement is that state funding for film should be integrated with private sector resources to ensure that the overall pie will be as large and as integrated as possible. The latest Swedish Film Agreement, which came into force on 1 January 2013, provides filmmakers with greater freedom of distribution, includes new funding for TV drama and additional funding for films targeting young audiences, and shorts and documentaries. The agreement, which runs through 2015, also stipulates that 'the funding

shall be divided equally between women and men' in the key positions of director, screenwriter and producer. Funds are allocated and administered by the Swedish Film Institute. In 2012, contributions totalled about USD 38 million. In addition to Film Agreement, Sweden enjoys a unique co-production opportunity through the Nordic Film and TV Fund, which is based on collaboration between five Nordic countries (Denmark, Finland, Iceland, Norway, and Sweden) (Dahlström et al. 2005b).

This study is embedded feature film production in Sweden. There is no specific production process, since a project depends on the requirements/budget of the film. However, a basic approach of feature film production can be divided into three stages: First, pre-production stage refers to plan out the film. Main activities are including finalizing the script and storyboards, arranging financial plans, schedules, location, cast and equipment. Second, production stage basically imply produce the material for a film. Shooting with the actors on the locations with the film workers is one of main activities of this stage. Third, post-production stage means fine tuning film material to create cinema. Major activities are editing and mixing, adding, trimming scenes according to the flow of the film. Feature film production requires diverse film workers from wide array of occupations - production, scriptwriting, directing, photo, sound, technique, scenery, decoration, wardrobe, make-up, and post-production. Many film workers are engaged in part-time jobs and on short-term contracts since the film industry is extremely uncertain and many films make no profit (Beyers 2002). Film industry is often acknowledged as 'project based' because creative production basically happens in the form of projects where creative professionals (for example, directors) and technical service providers (for example, camera operators and sound engineers) form teams for a limited time period to complete a film production (Obstfeld 2012). After completion of each project, teams normally dissolve and re-enter the market as freelancers (Foster et al., 2015; Bechky 2006; Defillippi and Arthur 1998). In particular, production managers rely on their ability to initiate project-based ties with core team members and build up large

complementary pools of freelance employees. These forms of networks have been called 'project networks' (Manning 2010; Manning and Sydow 2011). Project networks serve as pool of creative human resources, trust, and collaborative practices and thus help build up critical social capital that project companies need to sustain their business in an unpredictable film market (Ferriani et al., 2009).

In order to identify the major project networks of film production in Swedish film industry, I first conducted telephone interviews with 46 film workers. The compiled list of film workers is presented in Appendix 1. A film worker is defined as individual who has had paid employment in at least one film production since 2013. Interviews lasted averagely 15 minutes and key questions were 1) motivation of occupation, 2) work experiences, 3) his/her role and functions in film production, and 4) related positions and partners.

Interestingly, most of informants started their job as film worker coincidently. 21 of 46 informants have work experiences over 10 years and 15 of them have over 20 years. Only 9 of 46 film workers visited professional film academy, the others educated in non-film related field. 37 of 46 informants pointed out their 'personal connection' as a main motivation of starting their first job in film production. As one make-up artist described

"My best friend Maggie had worked as a make-up artist in 1989. One day, I visited her work place and I found the job was attractive. So Maggie asked her production manager for a temporary job, and I got my first job as a make-up *artist."*

40 of 46 informants pointed out production manager as the most related and crucial partner of their job, as a production manager organizes and arranges for a film production project. In other words, knowing production manager is essential for their next job. It also reveals the limited size of Swedish film industry.

"There are 2,000-4,000 film workers in Sweden. The exact number of film workers is not available since most of film workers work for both film and TV production. What is certain is that these film workers know each other very well from their work experiences. Film industry is a small society in Sweden. (SFI Jan *Göransson)"*

As limited film workers available for project-based film productions, knowing-who is pivotal for film workers. Especially, production manager play an important role in terms of gate keeping function. 44 of 46 informants agreed that finding a new job can be done through personal connections, in particular with production managers.

"Production manager is the most important person for me. Otherwise I will be unemployed. Per (production manager) saved my life. *I'm* on his *'favorite'* staff list, so if a new production projects launches, he calls me and offers a new job. Track record and recommendations from former managers are essential. (Light technician) *"*

"I have been working for 12 years as a sound technician. I found my first job via project manager whom I met during my internship. I called to several production managers and asked for vacancies, and one production manager offered me the job. I still try to keep calling production managers and ask around vacant positions or future projects. Calling them regularly and keeping good relationship with managers are my strategy. (Sound *technician)".*

Production Managers are not only in charge of employment issues, but also business and finance arrangements in film productions. Production Managers organize how the production budget is spent and making sure that everything runs smoothly during filming. Their major activities are including: 1) managing production team, hiring crews and contractors, 2) managing the production schedule and budget, and 3) booking of resources, equipment and suppliers. Since most independent production companies are small and the number of employees is low, there is almost no formal vocation training such as project manager

education and the like. Instead, the career path of a film producer usually follows the logic of starting as a low or unpaid intern doing unqualified tasks, and over time and via projects one works the way upward in the hierarchy towards managerial positions. This "learning by doing (Lundin and Norbäck 2009: 114)" leadership and personal network are account for the essential qualifications for project managers. It reveals that production managers should to tap into internal and external knowledge in order to catch new trends and build a network with film workers. In sum, connections with external (both foreign and national) knowledge and technologies are vital role of production managers. This context is particularly suited to the present research because this study aims to identify three main roles of project managers in the Swedish film industry, namely investigator, explorer and gatekeeper functions. In the following result are based on interviews with 6 production managers in Swedish film industry. Five male managers and one female manager were interviewed in their offices, via Skype and telephone and even on the filming sites. They have answered 1) what their roles are, 2) how they manage resources in terms of labor, equipment, studio space, services and locations, and 3) how they tap into external knowledge sources and diffuse it.

Table 2. Key functions of managers in film production

Source: own survey

	Rationale	Context	Scale
Investigator	-On-going employment -Access to human resource pool	-Limited budget and schedule -High pace of work –Tendency to hire film workers they	Local and National level

		know, or know of via a third party	
Explorer	-Access to new knowledge, technologies and additional subcontracts -Find co-production partners	-Limited domestic market and resource pool - International film festival	International level National level
Gatekeeper	-Access and exploit external knowledge	-Direct knowledge adoption and diffusion processes - Activate social networks	International level

Investigator

On the basis of observing the film production process and interview data, one feature of managerial role became evident- the importance of the ongoing employment. Influenced by pressures such as the limited budget and schedule, pace of work and an associated performance are constantly high. Therefore film managers tend to hire to work with film workers they know, or know of via a third party.

Recommendation and evaluation from former colleagues are crucial in this field (Production manager).

Ex-*colleagues'* comment on the quality of an *individual's* work become the dominant form to secure work offers (Light technician).

Getting jobs without being known by, or recommended to managers is almost impossible in this field (Location manager).

Managers can easily access to evaluation of technical skills and abilities of film workers (for instance, camera, art and sound etc.), however, they may have little knowledge on young talents such as new directors, scriptwriters or producers. In this case, managers tend to actively use SNS (Social Network Service such as Facebook and Twitter) and visit blogs in order to investigate new talents, technologies, fads or trends.

I regularly visit private blogs and Facebook of young talents. They are good source of new knowledge, information and technology (Production manager).

Actually, I hunt some young talented film workers via SNS. I would have never recognized their talent without their Facebook. They uploaded some short films and scenarios on their Facebook sites. Open access of SNS is a great tool to hunt young talents (Production manager).

Explorer

Represents film *worker's* interest, managers build pipelines in order to source knowledge, new technologies and information from external level

Production managers as explorers strategically shepherd new knowledge flow channels by connecting local resources and co-production partners. Translocal linkages or pipelines are important in order to find out about other markets, new knowledge, technologies and

additional subcontracts and avoid negative lock-in (Owen-Smith and Powell 2004). Managers build pipelines that are open function as sprinklers supporting the diffusion of information within the cluster. In particular, collaboration with foreign producers and co-productions with strategic markets, would probably favor the export of Swedish film. In addition, managers also eager to tap to the global VoD (Video on Demand) providers like Netflix and Amazon in order to broaden film export channels (Swedish Film Institute 2015).

I found my Icelandic co-producer during Gothenburg International Film Festival (GIFF) in 2012. We met again in GIFF 2013 and reached an agreement for a co-production. We applied for Nordic film funding and it was successful. Co-producing is a great experience. I *don't* hesitate to find new co-production partners. In this sense, attending international film festivals is worthwhile (Production manager).

 As an explorer, managers recognize the significance of translocal pipelines to acquire knowledge and establish of new pipelines. The development and maintenance of translocal pipelines provide access to international markets so they can establish creative, technical, and financial pipelines with markets in other countries.

Gatekeeper

Managers serve gatekeeper function as they direct external knowledge sourcing and co-production partners. They employ various strategies to routinise filming plan and optimise predictability of budget expenditure. They often intermediate the investors, government funding bodies, and corporate and private sponsors who support production regarding film

budgets. Using personal contact developed with a range of film professionals is one of the most important strategies, although inter-personal relationship requires a considerable amount of travelling and self-marketing.

I have the diplomacy to balance the creative anticipation of the film director, artists and film workers with the availablity of financial resources.

As a production manager, I involved in the physical aspects of the film production film production – for instance, controlling production expenditure and production materials, and monitoring and controlling. Furthermore, I keen to mediate contact between both internal and external relations. My mission is to educate and release film workers to the (local) film market, so lead to a high degree of interaction within the Swedish film market.

I am very keen on international co-productions during Gothenburg International Film Festivals (GIFF). The value of co-productions in Sweden is increasing and many managers try to acquire external funds such as ###. Developing projects through buying story rights, employing writers and searching for production partners is, however, an expensive and time-consuming business.

As Scott (2000) has pointed out, although clusters of activities rooted in particular cities, cultural industries clusters are typically tied into global markets through a handful of major companies.

The individual production managers use their inter-personal networks of differing spatial extents as they strive to develop co-production projects. The independents production managers carefully cultivated personal relations through participation in international film

festivals and informal interactions during festivals. Webs of personal relations exist over different spatial extents and may operate within complex networks of information sharing and exchange. For example, one production manager confirmed that he often work with producers in Gothenburg so they keep a close network by sharing resource pool. In particular, managers interlink diverse film workers and directors in international co-production process. Social networks especially play an important role because they reduce uncertainty in the selection of co-production partners (Faulkner, 1983) and help coordinate work (Starkey et al., 2000; Uzzi, 1997).

In this regard, Swedish film production managers in Stockholm generally have to construct, develop and activate social networks of international extent in order to influence the funding availability and film productions.

In addition to, managers contribute to the diffusion of knowledge and new technology within cities, regions, and countries (Jaffe et al., 1993). As one informant pointed out, so-called wet-down technology was adopted from outside of Sweden and diffused with the Swedish by a Swedish film production manager.

At that time, wet-down technology required high costs and specific equipment, even though it was essential for some raining scene in the movie. Accidently, I met one Korean film producer at the Busan International Film Festival (BIFF) 2004 and he introduced me the new wet-down technology. The new wet-down technology was much easier and also cost effective. I proved it with my Swedish technicians in Stockholm and decided to adopt it. In result, we reduced production cost up to USD 2000 per hour. Since we firstly adopted this wet-down technology in 2004, many other Swedish technicians applied it and now it is a kind of standard technology for raining scene.

Gatekeepers play key roles in mediating the flow of technological knowledge from one group to another, in some cases bridging structural holes (Burt 2004) between one innovation systems and another. They appropriate knowledge from foreign organizations and convey it to home-country firms, thus guiding knowledge from foreign countries into their innovation systems.

Moreover, managers actively attend seminars and industry markets in order to gain knowledge of new technologies and broaden personal networks.

I attend seminars at SFI four times in a year to learn new filming technologies. By accessing external knowledge, I could exploit new knowledge and apply it for the next film production. Updating knowledge and technology – including new talents as well – is crucial in these days since the film industry trend change fast.

 GIFF is an ideal place to meet international talents and extend personal network. It has been a meeting place for the audience, but also for film makers. GIFF Nordic Film Lab is a networking forum for young Scandinavian filmmakers- it is a place where I meet potential future work partners, and also to be a place for in-depth discussions about the art of filmmaking and creativity.

Meeting key industry players is the reason why I regularly attend international film festivals.

Managers have been often invoked as the most vital means to access and exploit external knowledge. In this perspective, Swedish film production managers mediate knowledge flows both across organizational and geographical boundaries by extending their social network.

5. Conclusion

This paper has aimed at shedding light on the multifunctional role of individual managers in the Swedish film industry. In addressing the complexity of knowledge production and diffusion mechanisms underlying feature film production, a detailed micro-level analysis of the functions involved in these processes was carried out. It is shown that managers undertake extensive investigator role for screening trends, fashion and fad. In addition, it is shown that mangers have an explorer function for building global pipelines in order to access external knowledge flows. Moreover, managers have a gatekeeper function as they direct knowledge adoption and diffusion processes within the industry. The findings provide further evidence that production managers play a central role in knowledge production and diffusion, not only because they are at the center of film production process, but also because mangers access to multiple-level networks of information and knowledge. Table 2 summarizes the key functions of film production managers.

The paper adds two main contributions to the extant literature. On conceptual grounds, it helps to qualify the role and function of managers as knowledge gatekeepers in the film production. Research on learning and innovation of cluster has flourished since 1990, and the emphasis recently has been on understanding how local learning processes through (global knowledge pipelines (Bathelt et al., 2004). Recent studies on gatekeepers reflect this growing interest on technology gatekeepers (Giuliani and Bell 2005; Hauge 2006; Boschma and Ter Wal 2007; Morrison, 2008; Rychen and Zimmermann 2008; Graf 2011). Very little research has been undertaken on the dynamics of gatekeepers (for an exception, see Graf and Krüger 2011). This paper progresses the research by looking at the knowledge gatekeepers in the creative industry. On methodological grounds, the paper proposes an operational method to quantify the importance of managers in mediating knowledge flows across networks that emphasizes the effects of individual activities and interactions. Differently from most of the literature on the subject, this paper has adopted an actor-based perspective and discussed how

production managers involved in the knowledge adoption and diffusion processes. This perspective, hopefully, will be useful and deployed in future research.

This analysis is set within specific empirical and methodological limits. The first limitation concerns that this research is an explorative single industry study. The generalization of its results is therefore bounded by the specificities of the film industry. The second limitation refers to the limited number of interviews carried out. Anecdotal evidence about multifunctional managers is not sufficient to generalize entire industry actors and their cross functions. Final limitation is that this study does not analyse the gatekeeping role of public institutions (Swedish film institutions, regional film funds, public research organizations, etc.) Overall, the three limitations above represent equally promising avenues for further research.

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[i] There are many kinds of knowledge: private and public, local and global, individual and collective, and tacit and codified (LUNDVALL, 2006)