Events as spaces for upgrading: Automotive events in Shanghai

Abstract

This study contributes to the literature dealing with upgrading of the Chinese automotive industry by analysing the role of events in the upgrading process. By combining literature on temporary clusters with that of knowledge sourcing and upgrading, we investigate how firms use events for upgrading. To do so, we systematically analyse a number of upgrading mechanisms. Moreover we analyse how event organisers can influence these mechanisms, and identify a number of barriers that may hinder the process of upgrading during events. Our empirical study of two automotive events in Shanghai reveals that firms use events particularly for monitoring, to access global buzz, and for the development of new global pipelines. Mobility turned to be less relevant. Event organisers act as 'temporary cluster managers', and influence upgrading via three types of policies: content policy, matchmaking policy and access policy. Identified barriers include defensive strategies of exhibitors, a focus on trade, and the large size of the show.. These barriers hinder monitoring and access to global buzz and pipelines in particular.

Key words:

Temporary clusters, upgrading, automotive events, Shanghai

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1 Introduction

Many studies about the Chinese automotive industry deal with the concept of upgrading that covers learning and knowledge development. Upgrading can occur in various spatial and organisational configurations, ranging from local to global, and from within a single firm to networks between lead firms and knowledge institutes and other firms (Gereffi, 1999; Coe et al., 2004; Van Tuijl et al., 2012). However, the way and degree to which this happens is widely debated. On the one hand, many studies detail the process of upgrading through joint-ventures, and show how foreign firms increase capabilities of local car manufacturers and suppliers by training of Chinese staff and the introduction of modern technologies (e.g. Thun, 2006; Liu and Dicken, 2006; Depner and Bathelt, 2005). Research shows that a joint-venture strategy is still a relevant policy instrument to obtain foreign technologies and knowledge through foreign partners, even after China's WTO entrance (Oh, 2013), and that Chinese firms also get direct access to new skills and technologies through foreign take-overs (Nam and Li, 2013). On the other hand, studies show that technological and design capabilities of Chinese automotive firms tend to remain low (e.g. Altenburg et al., 2008) and the joint-venture strategy has been criticised as being a 'passive learning model' with limitations on the degree of upgrading (Liu and Tylecote, 2009; Xi et al., 2009).

More generally, upgrading is often difficult to realise and is dependent on various factors (Lorentzen and Barnes, 2004; Ernst and Kim, 2002). One key factor to realise upgrading is that local actors have access to external knowledge sources in other regions. More generally, distance learning and knowledge sourcing is a key theme within regional studies and economic geography, and is discussed in various research streams that all acknowledge that local knowledge interaction remains important as well, due to limitations to remote knowledge sourcing (Bathelt and Henn, 2013; Maskell, 2014). The proximity literature acknowledges that permanent co-location of (research) partners can exist besides temporary forms of proximity through trade fairs and in research projects, giving access to non-local knowledge (Torre, 2008), while in literature on global value chains, global production networks and global pipelines, firms connect regions with each other via global corporate networks (e.g. Ernst and Kim, 2002; Coe et al, 2004; Bathelt et al., 2004). They do not only transfer goods and

capital from one region to the other, but can also bring new knowledge, experiences and skills that may lead to upgrading of local actors.

Building on these research streams, the concept of 'temporary clusters' has been developed, referring to exhibitions and trade fairs where local players have the potential for having face-to-face meetings with peers from all over the world (Maskell et al., 2006; Bathelt and Schuldt, 2008). Management studies (e.g. Borghini et al., 2006; Kalafsky and Gress, 2013) as well research in economic geography (e.g. Bathelt and Schuldt, 2008; Rinallo and Golfetto, 2011) see such professional events as important arenas for learning and knowledge exchange due to face-to-face interaction between agents from all over the world; observation of competitors, suppliers and consumers; mobility (recruitment of new staff); access to the latest market information, trends and rumours ('global buzz') and options to develop new 'global pipelines'. This is also demonstrated in a number of empirical studies (e.g. Bathelt and Schuldt, 2008; Schuldt and Bathelt, 2011; Bathelt and Zeng, 2013). Other studies detail how event organisers can steer and stimulate knowledge interaction (Rinallo and Golfetto, 2011) and show that events are used by firms in their technological learning process (Bathelt and Gibson, 2013). As such, it can be argued that international automotive events are important spaces for upgrading of the Chinese automotive industry.

This article aims to contribute to the debate of upgrading of the Chinese automotive industry by analysing the role of events in the upgrading process. We address the following questions: i) How do firms use events for upgrading, and ii) how can event organisers influence this process? We combine literature on upgrading and knowledge sourcing (e.g. Giuliani et al., 2005a; Asheim et al., 2007a; Martin and Moodysson, 2011; Van Tuijl and Carvalho, 2014) with studies on temporary clusters (e.g. Maskell et al., 2006; Bathelt and Schuldt, 2008) in order to derive a number of theoretical expectations regarding the role of events for upgrading. We investigate how firms – being visitors and exhibitors of trade shows[1] – use events for upgrading. Therefore, we systematically analyse a number of upgrading mechanisms (buzz, formal

[1] Also other actors like governments; universities and NGOs', can participate in trade shows as exhibitors or visitors, but following Bathelt and Gibson (2013) we focus on how firms use events to learn and to exchange knowledge.

collaboration, mobility and monitoring) (Van Tuijl and Carvalho, 2014) during events, and investigate how event organisers can influence these mechanisms via various types of event policies. We also identify a number of barriers that hinder the process of upgrading during events.

Using a case study approach, we empirically investigate the strategy of firms (via analysis of the upgrading mechanism) and event organiser's policies during two automotive events in Shanghai: Auto Shanghai and Automechanika. The first is the country's oldest and largest auto show, important for car manufacturers and suppliers, while the second is the world's second largest trade fair for suppliers. Both events attract exhibitors and visitors from China and abroad and are organised by a Sino-foreign partnership which is in touch with the domestic as well as the international automotive industry.

This paper is organised as follows. Section 2 reviews the literature on upgrading and temporary clusters in order to derive theoretical expectations about how firms can use events for upgrading. Next, in section 3, we discuss our research context and methodology, followed by the empirical study of the two auto shows in Shanghai in section 4. The last section (5) discusses the major results, concludes and provides suggestions for further research.

2 Literature review

2.1 Upgrading

The concept of upgrading is studied in various research fields. Firstly, management studies pay attention to upgrading of individual firms or nations in order to improve their competitive position (Porter, 1990). Secondly, within development studies, the technological capabilities and upgrading approach discusses how local suppliers in developing countries obtain technical skills needed to supply to global markets (e.g. Lall, 1992). Finally, studies in economic geography and regional economics deal with regional upgrading via global connections with other regions (e.g. Gereffi, 1999; Humphrey & Schmitz; 2002; Giuliani et al., 2005a; Coe et al, 2004). A similarity in all approaches is that an upgrading strategy aims to generate value added and to move

from the low road of competitiveness (e.g. price competition) to the high road (like design or marketing) (Giuliani et al., 2005a).

As such, upgrading can be defined as "*a process of learning and knowledge development in order to generate value added*" (Van Tuijl, 2013, p. 119). Hereby, it becomes clear that upgrading contains both a dynamic element (learning) as well as a more static part (knowledge transfer) and can take place in formal as well as informal ways (Trippl et al., 2009; Maskell et al., 2006). This means that upgrading takes places trough different 'upgrading mechanisms' – buzz (unintended access to non-formalised atmospheres), formal collaboration with other actors, mobility (recruitment and staff exchange) and monitoring (e.g. of competitors and consumers) – that have been used in a number of studies on the geography of knowledge transfer (e.g. Asheim et al., 2007a; Martin and Moodysson, 2011; Van Tuijl and Carvalho, 2014). The specific mechanisms can be used differently. For instance, 'monitoring', or 'observation', is regarded as a way of learning by Schuldt and Bathelt (2011), while Martin and Moodysson (2011) and Van Tuijl and Carvalho (2014) use it as a knowledge sourcing mechanism. Since upgrading covers both 'learning' as well as 'knowledge sourcing' we use the term 'upgrading mechanism'. This is important as "... temporary clusters, are important events that support economic processes of interactive learning and knowledge creation" (Bathelt and Schuldt, 2008, p. 853). Hence, it can be argued that events form an important arena for upgrading of the Chinese automotive industry.

Upgrading of the automotive industry is a policy priority for the Chinese state as well as lower governments. One tool to realise upgrading is the well-known joint-venture strategy in which foreign car manufacturers can obtain market access only via a partnership with a local car manufacturer. Part of this joint-venture deal is the exchange of technology and knowledge. However, the effect of this policy is questionable (e.g. Nam, 2011; Liu and Tylecote, 2009) and there are many barriers that may hinder upgrading, such as a weak educational system and tensions around intellectual property rights (Van der Borg and Van Tuijl, 2011).

More generally, upgrading is far from straightforward (Lorentzen and Barnes, 2004) and is dependent on many factors, such as the presence of linkages between local

suppliers and global buyers and learning capabilities of local firms. Moreover, it is argued that upgrading occurs in different environments that stimulate interactive learning and by the presence of specific regional assets, like technical knowledge or skilled workers (Ernst and Kim, 2002). One such environment is the temporary cluster as we show in this article.

2.2 Events as temporary clusters

The concept of 'temporary clusters' was introduced by Peter Maskell and colleagues (2006) and refers to trade fairs, exhibitions and other professional gatherings which are seen as important spaces for firms to catch trends, market information and for interactive learning via contact with suppliers, clients and competitors from all over the world. More recently, the concept is fine-tuned by making an explicit difference between trade fairs on the one hand and conventions on the other, whereby learning at trade fairs takes place via interaction and observation, while horizontal learning (transferring experience) is the major learning mode for conferences (Bathelt and Henn, 2013). However, in reality, during conferences, various exhibitions are organised (e.g. during breaks), while seminars are organised as a strategy to develop and transfer new knowledge during trade fairs (Rinallo and Golfetto, 2011), making it hard to make a difference between them. So, we use the general concept of 'temporary cluster', or simply 'events', also because all types of professional events are arenas for learning and knowledge transfer, hence for upgrading. In addition, events are important places to develop new external relations with partners from all over the world (Maskell et al., 2006; Bathelt and Schultz, 2008), which is an important starting point for upgrading (Ernst and Kim, 2002).

Temporary clusters can be distinguished from other organisational configurations for learning and knowledge transfer, being 'stable firm networks'; 'projects' and 'clusters'. These different configurations seem to complement rather than substitute each other (Maskell et al., 2006). For instance, events are used as deadlines to launch new products, technologies and concepts that have been developed within the other configurations. Similarly, there are a number of follow-up activities, such as interaction with new business relations, media coverage and analysis of competitors,

that take place after the event within other organisational configurations (Power and Jansson, 2008).

All the organisational configurations are arenas for upgrading, but how this process occurs differs per case, also depending on the upgrading mechanisms, as we explain in the remainder of this section. In addition, we discuss the how event organisers can influence these various upgrading mechanisms during events.

2.3 Upgrading mechanisms during events

In this section, we briefly discuss each upgrading mechanism[2] – buzz; monitoring; mobility and formal collaboration – and analyse in which configuration they occur, and particularly, elaborate on how and to what extent they may occur within temporary clusters from which we derive theoretical expectations how firms use events for upgrading.

Buzz refers to an ecology where firms can access information and knowledge through face-to-face contact and co-presence of people from the same industry. This unintended information exchange takes place via spill-overs in informal and information rich environment (Bathelt et al., 2004). In particular, large cities are seen as such ecologies to catch local buzz (Storper and Venables, 2004). However, more recently, it is acknowledged that buzz can also be transmitted on a global scale via virtual platforms and networks (Asheim et al., 2007a) and via events (Maskell at al., 2006). Events are thus important arenas where firms can catch global rather than local buzz, as has been shown empirically in various studies dealing with trade fairs in Germany, Northern America and China (Bathelt and Schuldt, 2008; Schuldt and Bathelt, 2011; Bathelt and Spigel 2012; Bathelt and Zeng, 2013). This global buzz is accessed during main events, as well as during side events and in informal meetings in bars and hotels afterwards.

Firms use *monitoring* as a way to strategically and intentionally observe competitors and customers (Van Tuijl and Carvalho, 2014). They can do this through intermediary

[2] It is not our intention to discuss the mechanisms in detail. This has been done elsewhere, e.g. see Asheim et al. (2007b); Martin and Moodysson (2011); Van Tuijl and Carvalho (2014).

mechanisms, such as magazines, as well as directly in environments that concentrate competitors, clients and other agents worth spying (Martin and Moodysson, 2011). Important arenas for the latter include permanent clusters as well as events. Particularly, the latter can be regarded as important places where 'learning-by-observation' and 'learning-by-inspection' can take place due to the large number of global agents that can be monitored and compared against low costs (Schuldt and Bathelt, 2011; Rinallo and Golfetto, 2011).

Mobility is a mechanism whereby upgrading takes place via recruitment of new employees from other firms and educational institutes as well as through staff exchange within firm's global networks (Van Tuijl and Carvalho, 2014). Important configurations where firms obtain this form of embodied knowledge include projects (e.g. in case of staff exchange within project organisations) and permanent clusters and events. Whereas a specialised labour pool forms one of the core elements of permanent clusters, events can be regarded as a mini labour market where firms can recruit new specialists (Maskell et al., 2006; Bathelt and Schuldt, 2008).

Formal collaboration refers to bilateral relations between firms and partners, including suppliers, competitors and research institutes (Martin and Moodysson, 2011; Van Tuijl and Carvalho, 2014). Such collaboration goes beyond technology transfer (e.g. via licensing and transfer of copy rights) and is an interactive process in which new knowledge development and learning takes place (Trippl et al., 2009). Due to the formal character and long time horizon, this upgrading mechanism takes mainly place within stable formal networks, like in joint-ventures, although it may also be relevant in formal projects. It is regarded as less relevant for permanent clusters and events. Formal collaboration during events is not likely, not only due to a difference in time horizon, but also because of the risk of knowledge leakage during events. Nevertheless, events can play a role for formal collaboration, since events are places where firms can start new global relations, or pipelines, leading to formal collaboration after the event (Bathelt and Schuldt, 2008).

2.4 Event organisers and upgrading mechanisms

The upgrading mechanisms can be influenced by event organisers in different ways as they can set the content of events and they can include or exclude certain actors via access control. For instance, they can invite global business leaders who bring cutting edge concepts to shows (Rinallo and Golfetto, 2011). They can also provide incentives to small local firms to come to the event, such as free exhibition space (Carvalho et al., 2012). The invitation of global players and incentives given to local firms both increase the possibilities for local firms to create new global pipelines, recruit new talent (mobility) and for monitoring. The latter can also be stimulated by the micro-geography, or lay-out, of trade fairs. For instance, putting competitors together in one hall makes learning-by-observation and comparing easier (Rinallo and Golfetto, 2011).

However, organisers can put restrictions to non-buyers and reduce copy right tensions through banning of actors, devices (e.g. photo cameras) or products shown. For the same purpose, event organisers can have specific copy right booths at the shows (Rinallo and Golfetto, 2011). All these restrictive measures function to protect Intellectual Property Rights (IPRs), but can also be regarded as barriers for upgrading, via monitoring in particular.

Event organisers can also stimulate knowledge development by investing in research (e.g. trend studies) or by mobilising exhibitors to generate new knowledge (Rinallo and Golfetto, 2011). Similarly, they can stimulate knowledge exchange and horizontal learning via the organisation of seminars or other types of expert meetings as side events or parts of trade shows. During such side events, organisers can again influence who benefits from possible knowledge transfer by including and excluding actors via access control.

Finally, how and the degree to which event organisers influence upgrading mechanisms depends on the type of organiser and event. Each organiser has various rationales to organise events, leading to different types of events with different exhibitors and visitors. Regional and national trade associations organise events to support local business to access global markets. These events tend to exclude non-

local exhibitors to protect the local industry, although they may redefine the geographical scale to respond to market trends (Rinallo and Golfetto, 2011). Also local or national public institutes/governments can organise events for the rationale of supporting local firms (Carvalho et al., 2012). In addition, they may organise events in order to attract business tourism, and focus in that case on the national or even international scale (Rinallo and Golfetto, 2011). Finally, specialised international event organisers organise events for the purpose of selling events and related products, including broadcasting rights, IPRs of media images, merchandise and hospitality services. Such shows are often part of global circuits, such as fashion weeks (Weller, 2008) or auto shows.

2.5 Theoretical expectations

To sum up, we expect that firms use events for monitoring (learning-by-observation and -comparison of competitors, suppliers and consumers), global buzz (that can be accessed due to face-to-face contact and temporary co-presence of many global players) and mobility (events as temporary labour markets, as place for recruitment). Formal collaboration is expected as a less relevant upgrading mechanism during events, however, events tend to be important places for firms to construct new global pipelines, leading to formal collaboration after events. This is summarised in Table 1. Event organisers can influence these upgrading mechanisms via various policies.

Table 1: Expected upgrading mechanisms during events

Mechanism	Use by firms during events
Formal collaboration	Development of new global pipelines
Global buzz	Access to trends and news through face-to-face contact with peers from elsewhere
Mobility	Recruitment of highly skilled labour
Monitoring	Learning-by-observation and -comparison of competitors, suppliers and consumers

3 Methods

In order to analyse the role of events in the upgrading process of the Chinese automotive industry, we use a qualitative case study of two automotive events in Shanghai based on interviews and secondary data sources. Case study research is suited to answer 'how' and 'why' questions about processes that are too complex for single experiments or surveys (Yin, 2003), and thus is suited to analyse how firms use events for upgrading; and how event organisers influence this process. The case study is part of a larger international study towards the role of events as a tool for societal development in cities and for business development (Carvalho et al., 2012).

3.1 Research context and case study selection

We have selected two automotive events in Shanghai as case studies for a number of reasons. First of all, Shanghai and the larger Yangtze River Delta Region form the largest and most advanced automotive cluster of China, covering many parts of the automotive value chain (Van Winden et al., 2010). It is also the country's most open and international city, enabling to investigate (new) global pipelines between Chinese automotive firms and overseas partners. Secondly, Shanghai is the second largest city in terms of indoor exhibition space (345,500 m^2) and convention centres (3) after Guangzhou (684,400 m^2 exhibition space and 5 convention centres) (Bathelt and Zeng, 2013). Thirdly, and combining previous two, Shanghai and Beijing are the cities that host the most automotive events in China (see Table 2).

Table 2: Number of automotive events in China

Database (selected time period)	**Beijing**	**Shanghai**	**China total**
Tofairs.com (December 2014-June 2015)	1	4	8
"Auma" (Association of the German Trade Fair Industry) (2013-2014)	16	13	46
M+A Expo Data Base (2014-2016)	13	20	57

Data from selected databases

Table 3 shows the key data of Auto Shanghai and Automechanika Shanghai helping us to explain our selection of these specific shows. Firstly, both events are the largest in the country and have grown rapidly. Shanghai Auto is the largest Auto Show and has more than doubled in terms of visitors compared to the 2005 edition, and also the number of exhibitors and exhibition space increased quickly. Automechanika Shanghai is the country's largest trade fair for car parts and has grown even faster. Both events attract exhibitors and visitors from China as well as abroad, that is particularly relevant to analyse the potential of the events as arena to develop new global pipelines. Secondly, the temporary gathering of the large number of visitors, exhibitors and media from all over the world is interesting to investigate how firms use the events for upgrading through analysis of the expected upgrading mechanisms. Thirdly, both events consist of a number of fringe programmes enabling us to investigate how firm use the shows for upgrading besides the main event. Fourthly, both shows have been organised by a Sino-foreign partnership that has relations with the international and the Chinese automotive industry. Finally, the two shows complement each other in terms of scope and visitors. Shanghai Auto exhibits entire vehicles and car parts with a focus on trade as well as general visitors (consumers), while Automechanika Shanghai exhibits car parts and accessories for trade visitors only. This enables us to investigate upgrading of various parts of the automotive value chain.

Table 3: Key data Auto Shanghai and Automechanika Shanghai (2013)

	Auto Shanghai	Automechanika Shanghai
First edition	1985	2004
Exhibitors number (number of countries and regions)	2,000 (18)	4,618 (38)
Visitor numbers (number of countries and regions)	813,000 (n.a.)	81,936 (141)
Exhibition space	280,000 m^2	210,000 m^2
Products show	Passenger and commercial vehicles (including 111 global debuts) Car parts and systems Automotive accessories	Parts and components Repair and maintenance Accessories and Tuning
Fringe programmes (numbers and types)	14 seminars Shanghai Automotive Summit Car design night	40, including seminars; factory visits and presentations
Media and journalists (numbers)	2,718 and 10,493	n.a.
Ticket price	100 RMB trade visitors 50-80 RMB general visitors	Free of charge; trade visitors only

Source: Data from IMAG and Messe Frankfurt

3.2 Research data

Our study was based on three complementary data sets: i) interviews with event organisers of both shows and firms participation in Auto Shanghai; ii) survey data about visitors and exhibitors of both shows obtained from the organisers of both shows; and iii) other secondary data sources. We conducted in total 23 semi-structured in-depth interviews[3] with managers of car manufacturers (9 interviews), tier-one suppliers (3), lower tier suppliers (2), event organisers (4); policy makers and associations (3) and one industry expert. With exception of the lower tier suppliers we interviewed (one Spanish and one German), we conducted interviews with Chinese as well as foreign firms in order analyse possible upgrading mechanism and barriers seen from two sides. We interviewed representatives of SAIC, VW and GM – covering all major car manufacturers based in Shanghai – and tier one suppliers from China,

[3] One interview was conducted during a study on energy transitions in Shanghai (Carvalho et al., 2013). All others were done during a study on anchoring events in cities (Carvalho et al, 2012).

France and Germany. All firms participate in Auto Shanghai as exhibitors, with exception of, again, the two lower tier suppliers who only go to auto show as visitor. Regarding the event organisers we spoke with the main Chinese organiser of Auto Shanghai and with the German organiser of Automechanika.

In contrast to most other studies dealing with temporary clusters, we did not conduct interviews during the event which is too crowded to have long conversations, and the presence of competitors may restrict the interviewees to speak freely. Instead, we visited the offices of the interview partners after the show. This enabled us to have in-depth interviews (lasting between 60 and 120 minutes each) and to get more sensitive information (e.g. monitoring strategies). Moreover, after the show, we could gain insights into the relation between activities during the show as well as follow-up activities. We worked with a semi-structured interview format, based on the existing theory on temporary clusters. The primary focus of our attention and questions included ratios for joining Auto Shanghai; activities conducted during the event; follow-up activities; media strategy during the event; general lay-out of the show and organisation of the event.

The survey data is used to complement the interview data and covers in particular the ratios why visitors and exhibitors go to the events. This is used as first insight of the upgrading mechanisms indicating how firms use events for upgrading. Other secondary data sources include post-show reports, information brochures and website of the shows, press releases of firms and the events, corporate reports, policy documents, information from companies' websites and professional automotive magazines, and are used to triangulate the interview data.

4 Results

Auto Shanghai was set up as an import platform linked with China’s upgrading and joint-venture policy. The car exhibition started in 1985 as a tool to speed up development of a modern automotive industry which started with the joint-venture between SAIC and VW in 1984. By that time, there were no foreign players in China, while domestic car manufacturers had a low quality. Auto Shanghai was set up in order to find foreign partners to transfer technology and the event primarily served for

local players to find foreign partners to start joint ventures. Hence, it functioned as a business matching platform, a place to search international partners, linked with the joint-venture policy. Automechanika Shanghai was set up nearly two decades later, in 2004, as professional trade show for car parts and accessories and covered mainly Chinese exhibitors, although the first edition also included five foreign pavilions. The large time lag between the two shows is illustrative for the late development of China's aftermarket compared to the market of entire vehicles.

Nowadays, both shows might be regarded as 'local-global clustering spaces' (Li, 2014) with large numbers of domestic as well as international visitors and exhibitors. This is important to investigate how the events are used by firms for upgrading by analysing the various upgrading mechanisms which we do in section 4.1. In that section we also provide an overview of identified barriers that hinder the process of upgrading during automotive events. The last part of the section (4.2) pays attention to the role of the organisers as 'temporary cluster managers' and analyses how they can influence the upgrading mechanisms.

4.1 Firms and upgrading mechanisms during the shows

In order to get a first indication about how firms use events for upgrading we use surveys from the organisers dealing with the question why firms go to the events (see Table 4). Hereby, it becomes clear that the trade function is the most important at both fairs as 'purchasing' and 'seeking representations' jointly form about half of the rationales why visitors go to the events. Also our interviews among the organisers of both shows and the firms participating at Auto Shanghai confirm the importance of the events for trade. This suggests that firms do not use the events for upgrading.

However, 'seeking representation' may lead to the development of new pipelines afterwards. Moreover, also 'gathering information' - covering market and technology information - is an important reason why firms go to the Auto Shanghai (27.6%) and Automechanika Shanghai (32%) (Table 4). This suggests that firms use the shows also for monitoring and to get access to global buzz, which is possible due to the high media attention, large number of visitors, and the diversity of exhibitors and products shown (see Table 3 in the previous section). This is also illustratively put forward by

an event organiser: “Exhibitions can be seen as a gallery and as a seminar at the same time. You can get information so quickly. You can touch products and can talk with many major persons”.

In the remainder of this section, we investigate in more detail how firms use Auto Shanghai for upgrading. Thereto, we analyse the various mechanisms.

Table 4: Purpose of visit

	Auto Shanghai (2011)	**Automechanika Shanghai (2012)**
Purchase	19.8%	33%
Gather information	27.6%	32%
Seek representation	22.5%	19%
Visit suppliers	17%	10%
Evaluate show for future exhibiting	6.8%	5%
Others	6.3%	1%

Source: Data from IMAG and Frankfurt Messe

Global buzz

Firm use Auto Shanghai as a place to get access to the latest market information, trends and rumours. They can disseminate and catch such global buzz via the media. During the media days, leading car manufacturers organise press release shows to unveil new models. For instance, GM released the new Malibu, Buick Envision, Camaro, and the Captiva models during the show of 2011. Moreover, exhibitors invite journalists to their booth and ask them to report about the firms. In these ways, leading firms can promote themselves, but can also set new trends that can be followed by others.

The media attention during Auto Shanghai is selective, having implications for the information disseminated during the event. Firms pay to organise press releases and for journalists to spread the ‘right message’. Special media days and the organisation of press releases are seen as expensive, hindering Chinese firms with limited budgets to organise a press release show, and thus, to promote their products. For instance, BWI, a Chinese tier-one supplier, does not organise a press show for costs reasons.

Another way for firms to access 'global buzz' during the event is the possibility to get (and stay) in touch with peers from all world, which happens by different actors, and on different levels. CEOs and other high level managers of car manufacturers and tier-one suppliers meet each other during the show (e.g. during the media days) in order to remain updated about the latest industry news, rumours and activities of others, as becomes clear from interviews with managers of a German and a Chinese tier-one supplier respectively: "managers from Germany come to the show and give a speech and tell how good we are" and "a lot of big bosses come to the event. They have the opportunity to meet each other and there is no need to fly a lot". So, the importance of 'temporary being there' clearly holds during the auto show. This becomes also clear from the fact that certain tier-one suppliers visit the show, even though they do not expect to find new clients or to sell products during the show. They go to show to stay in touch with peers from elsewhere and to fulfil expectations of clients who expect them to be there.

Besides CEOs and high level managers, also lower managers visit Auto Shanghai for network reasons and to stay in touch with the 'automotive community'. The automotive industry is seen as a small world and many persons know each other, as put forward by an interviewee: "The show is a good place to meet friends, to drink a coffee together. There are many people I know". Often these meetings are not about business, but concern small talk, although in between the lines discussants can get useful information from each other, and as such, the show gives access to global buzz.

Mobility

At the first sight, Auto Shanghai seems to be less relevant for mobility purposes, as none of the analysed firms use the show for human resources purposes. However, some interviewees indicated that other firms do use the event to find new talent, although mainly for lower positions. In addition, the show is visited by many students in automotive related studies (e.g. mechanical engineering) in the hope to find a job or to find a company that is willing to provide an interim ship. Some firms add places for students to leave their CV, so suggesting some evidence for the role of Auto Shanghai as a temporary labour market.

Monitoring

Auto Shanghai is an important place for monitoring since firms use the show to analyse competitors and suppliers, world leaders in particular. The show is seen as the key spot to get inspiration for new designs and technologies, and to learn from leading car manufacturers, like from Western luxury car producers. For instance, as put forward by an engineer of a joint-venture firm: "I just walk around and see which new technologies are available ... I take pictures and try to get information. I walk around to see what they <other firms> have".

As such, learning-by-comparing and –inspection during the event takes place via physical observation, chats with exhibitors, and by taking photos. During the show, it is possible to open cars and to see which technologies and parts have been used and which suppliers produce these. Suppliers and car manufacturers label these parts, and in this way, it is possible to trace the firms that produce these parts after the show. In general, obtained information (e.g. certain technologies or designs) has been codified by taking photos. Not only entire vehicles, but also small (engineering) details are pictured by professional visitors. After the show, they write reports to codify the obtained data, and engineers and designers discuss the small details (e.g. a lamp or a wiper) and see what can be used for further development of existing car models or for the development of new models. For instance, as expressed by an engineer of a Chinese car manufacturer: "During the show <Auto Shanghai> we saw a certain model with an interesting rear light. We are now working on it, and try to use it in our car models as well." This illustrative quote does not only depict the relevance of the show for monitoring, but also how firms use the obtained information afterwards. Monitoring during Auto Shanghai also refers to observation of consumers. The show is regarded as a place to strategically catch the latest market trends and to explore wishes of consumers. By observing consumers at the show, firms gain insights into what Chinese consumers want and what is the most suitable for the Chinese market. The show provides information about different segments, as mentioned by an engineer of a car manufacturer: "At the show I can see the diversity and different segments. There are typical cars for ladies, for men as well as cars for families with

kids". Firms use the show to test the reactions of the public on demos and prototypes. These reactions are used after the show in order to develop the prototypes further.

Firms do not only monitor other actors directly, but are also using the media to do so. The media is not only used by firms to disseminate and obtain 'lose information' (global buzz), but also to obtain strategic data from competitors. As mentioned by a manager of a Chinese supplier firm: "A friend of me is journalist. He always goes to the show and brings me the latest news". In this sense, journalists can be regarded as 'spies' to collect strategic information for firms, and hence, play an active role in monitoring besides the function of a more passive intermediary transfer mechanism.

Global pipelines

Firms use the Chinese auto show as place for the development of new global pipelines which happens in various ways. First of all, Chinese car manufacturers use the car show to get in touch with Western tier-one suppliers as new partners and vice versa. For instance, engineers of SAIC visit booths of leading Western tier-one suppliers (e.g. chassis suppliers like Continental, Bosch and ZF) in order to get information about new technologies and systems. These engineers analyse the technologies displayed and try to get more details via face-to-face meetings with persons at the booth. If there are interesting new technologies, the engineers invite the suppliers for a follow-up meeting in which the suppliers get the opportunity to demonstrate their technologies in more detail at the production site of SAIC.

Secondly, Chinese as well as Western car manufacturers and tier-one suppliers use the auto show to find new lower tier suppliers. They visit the halls with part suppliers in order to extent their supplier base. The part suppliers in Auto Shanghai cover Chinese and Western suppliers and are expected to have a sufficient quality to meet global quality standards. The presence of suppliers at the show is already seen an indication that they have a relatively high quality as they can it afford to pay the exhibition fee. Selected suppliers can be used by all subsidiaries of the car manufacturers which normally use a global sourcing strategy. Thus, seen from the side of the part suppliers, the show is a spot to get access to new global pipelines.

Table 5 summarises the results and details how firms use Auto Shanghai for monitoring, mobility and to get access to global buzz and new pipelines.

Table 5: Overview of the findings

Mechanisms	Use by firms during events
Global buzz	• Trends and market information obtained via media (e.g. press shows) • Meetings and contacts with 'global automotive community'
Mobility	• Limited to lower jobs and students
Monitoring	• Observation of competitors and suppliers. Importance world leaders • Use media as 'spies' to collect strategic information • Observation of consumers to obtain insights market niches and features Chinese market • Photo cameras used to codify information
Global pipelines	• Chinese car manufacturers get in touch Western tier-one suppliers • Chinese and Western car manufacturers and tier-one suppliers search for new lower tier suppliers

Barriers

There are a number of barriers that hinder the degree to which extent firms can use events for the development of global pipelines, to access global buzz and monitoring. First of all, various discussion partners indicated that maintaining existing relations seems to be more relevant than exploring new ones, putting a limitation to the development of new global pipelines.

A second barrier is the focus of the show on marketing and sales, while technology and knowledge transfer and learning are regarded as less relevant. Many persons in the booths are involved in marketing and sales and have limited or no skills in more advanced functions like engineering and design. This reduces the chance for knowledge transfer, as explained by an engineer of a car manufacturer: "I try to ask many things, but they don't know it; they do not understand the entire system". In addition, in the interviews it was stressed that the persons in the booths tend to be young with limited experience, also hindering the transfer of more advanced knowledge. Hence, it can be stated that the 'wrong' people are at the auto show in order to get the access to advanced information and knowledge.

Another barrier obtained from the interviews is the large size of the show in terms of visitors. The show is regarded as too crowded by nearly all discussion partners, that hinders the options for monitoring and face-face meetings needed to access global buzz and the development of global pipelines. The large number of visitors restricts the possibilities to observe models and technologies properly and to have a long conversation with people at the booths. For instance, as illustratively put forward by an engineer of a car manufacturer: "There are too many people. I wanted to ask things, but I couldn't. That's a pity. ... I want to see every detail, but I was not able to as it was too crowded."

A last barrier mentioned by our discussion partners concerns a number of defensive strategies of exhibitors to protect new concepts and technologies and to prevent knowledge leakage, and thus to restrict monitoring. Firstly, car manufacturers, as well as tier-one suppliers, sometimes show only rough concepts – or 'empty shells' – without further instructions[4]. Car manufacturers tend to use other auto shows, the one in Geneva in particular, to give more details and instructions about new technologies via workshops. Many international players tend to unveil 'new to the world' technologies in Geneva or in the home market (e.g. Valeo, a French tier-one supplier unveils new technologies in Paris first), while Auto Shanghai is used to display products which are already on the market elsewhere or to unveil products that are developed for the Chinese market specific.

Secondly, exhibitors have restricted areas in which they invite key relations in order to give full models and to explain how these work. Only invited partners that have VIP tickets can get access to the back side of booths.

Thirdly, and related with the previous, exhibitors are selective regarding the products displayed during Auto Shanghai. Products that are protected by copy rights, or systems and vehicles that are too complex to understand can be easily shown to the

[4] There is another rationale for the 'empty shell strategy', particularly regarding to new energy vehicles. All car makers introduced green concepts during Auto Shanghai in 2011, but they do this mainly for strategic reasons to show off to competitors and to keep political support in response to the high ambitions of governments in China (Chinese State and City of Shanghai) to develop a clean automotive industry. The 'new energy vehicles' displayed are mainly demos while the development of full versions takes more time (about 5-8 years) (interview data).

general public. For instance, tier-one suppliers make integrated systems that are too difficult to understand by monitoring only. Similarly, on the other extreme, car parts are often considered as general knowledge and can be displayed easily as well. 'In between products' that are simpler than integrated systems, but not considered as general knowledge, are not displayed at Auto Shanghai. As such, we identified a gap in the exhibitors of Auto Shanghai between car manufacturers and tier-one suppliers and small (often domestic) part makers. Tier-two suppliers, that produce relatively simple systems (compared to tier-one suppliers), such as doors and dashboards, do not participate in Auto Shanghai. The reason is that these intermediate suppliers have a rather stable market and supply to car manufacturers and tier-one suppliers and not to consumers, and brands are less important. These firms know their clients well and Auto Shanghai does not seem to be the right place to maintain these relations.

4.2 Event organisers as temporary cluster managers

Auto Shanghai and Automechanika Shanghai are both organised by a Sino-foreign partnership, but with a different starting point. Auto Shanghai is managed by Shanghai International Exhibition Co. Ltd. (SIEC) that searched an international event organiser as partner in order to get access to the international automotive industry. This international partner used to be an organiser from Hong Kong and is now the German IMAG/Messe München International (MMI)[5]. Automechanika is an existing brand for automotive trade fairs that was introduced in China by the international trade show organiser Frankfurt Messe. Even though in theory Frankfurt Messe could enter the Chinese market without a local partner, it decided to team up with the China National Automotive Industry International Corporation (CNAICO) as this helped to get the required licenses.

Through such Sino-foreign partnerships, the organisers play an important role as 'temporary cluster managers', and can influence upgrading mechanisms, particularly the development of new global pipelines, monitoring and global buzz. In order to

[5] SIEC and MMI and are the operational organisers of the show. Other organisers include various national and regional bodies and associations, such as China Association of Automobile Manufacturers, China Council for the Promotion International Trade, Shanghai Sub-Council China Council for the Promotion of International Trade, Automotive Sub-Council.

structure the empirics, we specified three types of event policies: 'content policy'; 'matchmaking policy' and 'access policy'.[6]

Content policy

There are various ways how the organisers can influence the content of the show, affecting the upgrading process. Firstly, as a tool to increase the conditions for learning-by-observation and -comparing, and based on differences in exhibition price, similar companies are clustered in the same halls, as becomes clear from the analysis of the lay-out of the fairs. In the case of Auto Shanghai, the most strategic and expensive spots next to the main entrance are taken by SAIC – a large car manufacturer from Shanghai – and its joint-venture partners VW and GM. Similarly, the halls next to the east entrance are for luxury sports cars (including Ferrari, Spyker, Maserati, Bentley, Lamborghini and Rolls-Royce) and for luxury vehicles (among others, Chrysler; JLR; Volvo and Mercedes). Similarly, at Automechanika Shanghai, these strategic spots are taken by international exhibitors and key brands, who can it afford to pay high prices. The other, less expensive, 'more peripheral' halls of both shows concentrate also similar products and support monitoring, like different halls for tier-one suppliers and for part suppliers (Auto Shanghai) and 'repair and maintenance'; accessories and tuning'; 'electronics and systems' and 'power train' as illustrations for Automechanika Shanghai.

Secondly, event organisers influence the content of the show via a specific theme for each edition, which may influence the dissemination of global buzz. The theme is often based on general market trends and on specific needs of the Chinese market or policy priorities and are brought in by the international and Chinese event organisers respectively. For example Auto Shanghai 2013 was themed as "Innovation for better life", referring to the general development of clean vehicles in the global automotive industry as well as to the ambitions of China to develop new vehicle technologies independently from foreign partners and to counter the negative effects from car mobility, like air pollution and congestion.

[6] The types of event policies emerged out of our research data and inductive reasoning, but are aligned with existing literature on temporary cluster organisers (Rinallo and Golfetto, 2011).

Thirdly, as a way to stimulate learning and information exchange and to increase the potential for the development of new global pipelines, the event organisers offer space for a large number of knowledge exchange activities, including summits, seminars and presentations, a car design night and excursions. Such fringe programmes are organised by different actors, such as national and international industry associations, local and higher governments, domestic and foreign firms, research institutes and the media, and cover a wide variety of topics, like European safety standards; combustion cooling technologies; transmission and heating systems (examples from Auto Shanghai) and aftermarket regulations as an example from Automechanika Shanghai. Another example is the challenge how to transform China's automotive industry from a manufacturing platform into a global innovation hub that was the topic of the Auto Shanghai Summit 2013. This summit brought together Chinese high-level policy makers and association leaders - including the vice mayor of Shanghai; the vice chairman of China Machinery Industry Federation; and the China Council for the Promotion of International Trade – and 420 invited Chinese and foreign business executives, leading economists, business association representatives and foreign ambassadors who jointly discussed the future of the Chinese automotive industry. The activities during the fringe programmes complement the trading, branding and marketing functions of the automotive events and contribute to knowledge exchange regarding new technologies and market trends and possibilities for networking.

A final part of the content policy regards the inspection of the products displayed on IPRs. This protects original works and increases the quality of the products shown, which is important for monitoring. For instance, before Automechanika Shanghai starts, Frankfurt Messe hires a Japanese specialist who checks whether IPRs requirements are fulfilled in order to avoid that illegal car parts are displayed on the show.

Matchmaking policy

Matchmaking policy is particularly important for the development of new global pipelines between Chinese and overseas firms and is enabled due to the Sino-foreign partnership structure of the organisers. The organisers have access to the domestic and international markets and can attract firms from both 'worlds' directly as well as

indirectly via partners, including Chinese and international industry associations. For example, Automechanika Shanghai uses the international database from its 'mother in Frankfurt' to attract international firms as exhibitors. The same happens via international trade organisations that are responsible for the foreign pavilions on the event. Moreover, with support of the Commercial Vehicle Parts Market Federation, Automechanika Shanghai invites global buyers to the show, offering possibilities for Chinese firms to get in touch such global leaders. Invited global buyers include representatives of large suppliers like Delphi, and Eaton Magna and of car manufacturers such as Daihatsu and Daimler. Note that in many cases the representatives are purchase managers that may leave limited space for technological knowledge interaction and learning.

The organisers can also match global with domestic players via the registration system. During the registration, firms can add their requirements and via an online system, the organisers try to match actors with similar interests. A similar system has been used for the knowledge exchange activities that bring together actors sharing the same interest, like certain technologies. One specific activity during Automechanika Shanghai includes even a 'matchmaking' event, directly targeted to find new partners.

Another instrument used to increase the potential for matchmaking is by dividing events in different days in order to reach various target groups and to prevent conflicts between them that may hinder information and knowledge exchange. For example, Auto Shanghai is divided into three parts i) 'media days', targeted to specialised press and VIP visitors (e.g. CEOs of firms and high level policy makers); ii) 'trade days', visited by professionals; iii) 'general days', aiming to promote and sell cars among consumers.

Access policy

The organisers can also influence who participate in the events. They can not only invite exhibitors and visitors, as explained in the previous sub section, but can also restrict 'undesired' participants to access the shows via at least two instruments. One instrument is the exhibition price. For instance, at Auto Shanghai, even the least expensive spots at the outdoor part of the venue space are regarded as being still too

expensive for part makers with limited budgets. In this sense, the exhibition price works as a selection mechanism, keeping away low quality and weak performing part makers. There are no subsidies or discounts given to small domestic firms or start-ups. This price mechanism, thus, works as a quality filter safeguarding a certain quality, but it also hinders new entrants and limits the possibilities for smaller players to access global pipelines.

Also the second instrument, a black list of firms that broke IPRs, is used to safeguard a certain quality by restricting entrance for firms on the list. However, there are limits to this measure, as 'blocked firms' may still enter events under another name. Therefore, as a further step to protect IPRs, at Automechanika Shanghai, there is a specific 'IPR Protection Admin Office' where exhibitors can report fake or duplicated products.

The three types of policies are summarised in Table 6 and influence the possibilities for global buzz, monitoring and the development of global pipelines in particular.

Table 6: Event managers' policies and instruments

Policy	Instruments
Content policy	Lay-out of the show
	Theme
	Fringe programmes with knowledge exchange activities
	Inspection products displayed
Matchmaking policy	Invitation global leaders
	Registrations system
	Division in different days
Access policy	Exhibition fee
	Black list

5 Discussion and conclusions

This study contributes to the voluminous literature dealing with upgrading, governance and policy in the Chinese automotive industry (e.g. Liu and Dicken, 2006; Thun 2006; Van Tuijl et al., 2012; Nam, 2011) that, according to our knowledge, has not yet paid attention to trade fairs. By combining literature on knowledge sourcing

and upgrading with that of 'temporary clusters', we have investigated how firms use events use for upgrading. Therefore, we have systematically analysed a number of upgrading mechanisms during events. We have also investigated how event organisers influence these mechanisms. Empirically, we have studied two cases of automotive events in Shanghai: Auto Shanghai and Automechanika Shanghai.

In line with our theoretical expectations, and regarding our first research question, we have found that firms use automotive events in Shanghai for 'global buzz', 'monitoring' and the development of new global pipelines (see Table 5). The 'being there' argument holds for both higher as well as lower managers who visit Auto Shanghai for face-to-face meetings with peers from the global automotive community, giving access to the latest news, trends and gossips (global buzz). Furthermore, the event is an important spot for monitoring of competitors, suppliers and consumers. Hereby, it confirms the presence of Western world leaders (Borghini et al., 2006) as an important asset for learning-by-observation and learning-by-inspection by Chinese firms at both analysed events, even though the world leaders do not show their state-of-the art products which are exhibited in the home base, in line with the study of Bathelt and Zeng (2013). We have also found that the automotive events are used as a platform where Western car manufacturers and suppliers search for new Chinese relations and vice versa, indeed offering the potential for the establishment for new global pipelines. Mobility turned out less relevant than we had expected.

Regarding our second research question, we have found that the event organisers indeed influence these upgrading mechanisms, particularly monitoring, buzz and development of global pipelines. We show that they act as 'temporary cluster managers' and explain three types of event policies used: content policy, matchmaking policy and access policy (see Table 6). The organisation of both automotive events is done through Sino-foreign partnerships (see also Bathelt and Zeng, 2013), which manage to create a platform that brings together the Chinese and global automotive community, through the matchmaking policy in particular.

We have also identified a number of barriers hindering upgrading during the event. Our evidence shows that maintaining existing relations seems to be more important

than establishing new relations, limiting the development of new global pipelines. Moreover, the large size of the show and defensive strategies of exhibitors – e.g. restricted areas and products shown, including 'empty shells' and too complex products to duplicate – limit the options for monitoring and to access global buzz. These barriers are in line with other studies putting limitations for the role of events as temporary spaces for learning and knowledge transfer (Rinallo and Golfetto, 2011; Maskell et al., 2006; Power and Jansson, 2008; Bathelt and Schuldt, 2008).

This study provides a number of new insights that may help to develop the 'temporary cluster literature' further. Firstly, we show new evidence how automotive events are linked with other organisational configurations, such as clusters and formal collaboration through joint-ventures, that is conceptualised in other studies (Maskell et al., 2006; Bathelt and Schuldt, 2008; Bathelt and Gibson, 2013), but empirical evidence, so far, seems to be limited to exceptions like Li (2014). We show that obtained information and knowledge during Auto Shanghai (particularly through global buzz and monitoring) has been codified (via reports and photos) and is used as input for further development processes after the show. Moreover, from a political point of view, Auto Shanghai has been set up as a networking platform linked with the joint venture policy. This seems to work, as the show is used by Chinese and Western firms to find new relations. After the show, follow-up meetings take place, although it is unclear to what extent these meetings deal with knowledge transfer and learning. In addition, the Sino-foreign partnerships of the organisers of both automotive events can be regarded as joint-ventures themselves.

Secondly, we unveil new insights of which firms do (not) participate in trade shows as not all firms join trade fairs due to differences in their needs and focus (Maskell, 2014). Auto Shanghai is particularly relevant for car manufacturers, tier-one suppliers and part suppliers, while tier two suppliers tend not to participate due to a risk of knowledge leakage. Moreover, due to a relatively high entrance fee and a lack of subsidies, small (local) firms cannot participate in the Auto Show, in line with a study by Kalafsky and Gress (2013) that shows that smaller firms attend fewer international trade fairs.

Finally, this study provides avenues for further research. Firstly, from a conceptual point of view, we suggest using the different knowledge bases (Asheim et al., 2007b) to gain more insights into how knowledge sourcing during events takes place, also regarding the link with other organisational configurations. We have hints that events – as 'inspirational bazaars' – are particularly useful for obtaining symbolic knowledge, that is used in innovation projects after the event where other types of knowledge may be more relevant. Secondly, from an evolutionary perspective, more insights are needed in the development of temporary clusters in time. Hereby, it seems that Auto Shanghai has developed from an 'import platform' to attract foreign car manufacturers to a 'local-global clustering space' with a large variety of foreign and domestic players in different parts of the automotive value chain (Li, 2014). Within such an evolutionary analysis of the shows, the link with the development the permanent clusters where the events are organised needs to be analysed as well: to what extent are Auto Shanghai and Automechanika Shanghai steering the development of the automotive industry in Shanghai and vice versa? Thirdly, it is interesting to compare our cases of automotive events in Shanghai to other empirical data, covering trade shows at other places and in other industries, also because the degree of knowledge transfer and learning varies widely (Schuldt and Bathelt, 2011). Hereby, we suggest analysing Auto Shanghai (or Automechanika Shanghai) in relation to other auto shows (or automotive supplier trade fairs), jointly forming a global circuit for knowledge exchange and learning (Power and Jansson, 2008). Relevant questions here include: how do 'global temporary cluster managers' (like IMAG and Frankfurt Messe) steer knowledge transfer between various shows, and how do Chinese firms use other auto shows (e.g. the one in Geneva) in their upgrading strategies?

References

Altenburg, T., Schmitz, H. & Stamm, A. (2008). Breakthrough: China's and India's Transition from Production to Innovation. *World Development*, 38(2), 325-344.

Asheim B, Coenen L. & Vang J. (2007a). Face-to-face, buzz, and knowledge bases: socio-spatial implications for learning, innovation, and innovation policy. *Environment and Planning C*, 25, 655 – 670.

Asheim, B., Coenen, L., Moodysson, J. & Vang, J. (2007b). Constructing knowledge-based regional advantage: Implications for regional innovation policy. *International Journal of Entrepreneurship and Innovation Management*, 7: 140–55

Bathelt H, Malmberg A. & Maskell P. (2004). Clusters and knowledge: local buzz, global pipelines and the process of knowledge creation. *Progress in Human Geography*, 28, 31- 56.

Bathelt H. & Schuldt, N. (2008). Between luminaries and meat grinders: international trade fairs as temporary clusters. *Regional Studies*, 42: 853-868.

Bathelt, H. & Spigel, B. (2012). The spatial economy of North American trade fairs. *The Canadian Geographer*, 56(1), 18-38.

Bathelt, H. & Zeng, G. (2013). The Development of Trade Fair Ecologies in China: Case Studies from Chengdu and Shanghai. Paper re-submitted to *Environment and Planning A*.

Bathelt, H., & Gibson, R. (2013). Learning in 'Organized Anarchies': The Nature of Technological Search Processes at Trade Fairs. *Regional Studies*, (ahead-of-print), 1-18.

Bathelt, H., & Henn, S (2013). *The Geographies of Knowledge Creation over Distance: Toward a Typology*. Paper to be presented at the 35th DRUID Celebration Conference 2013, Barcelona, Spain, June 17-19.

Borghini S., Golfetto F. & Rinallo D. (2006), Ongoing search among industrial buyers. *Journal of Business Research*, 59, 1151-1159.

Carvalho, L., Van Tuijl, E., & Van den Berg, L. (2012). *A world of events: how can cities anchor the advantage?* Rotterdam: Euricur.

Coe, N.M., Hess M., Yeung, H.W. Dicken, P. & Henderson J. (2004). Globalizing' regional development: global production networks perspective. *Transactions of the Institute of British Geographers*, 29(4), 468–484.

Depner, H. & Bathelt, H. (2005) Exporting the German model: The establishment of a new automobile industry cluster in Shanghai. *Economic Geography*, 81(1), 53-81.

Ernst, D., & Kim, L. (2002). Global production networks, knowledge diffusion, and local capability formation. *Research Policy*, 31(8-9), 1417-1429.

Gereffi, G. (1999) International trade and industrial upgrading in the apparel commodity chain. *Journal of International Economics*, 48(1): 37-70.

Giuliani, E., Pietrobelli, C. & Rabellotti, R. (2005a). Upgrading in Global Value Chains: Lessons from Latin American Clusters. *World Development*, 33(4), 549-573.

Humphrey J. & Schmitz, H. (2002). How does insertion in global value chains affect upgrading in industrial clusters? *Regional Studies*, 36 (9), 1017-2002.

Kalafsky, R. V., & Gress, D. R. (2013). Go big or stay home? Korean machinery firms, trade fair dynamics and export performance. *Asia Pacific Business Review*, (ahead-of-print), 1-17.

Kalafsky, R. V., & Gress, D. R. (2013). Go big or stay home? Korean machinery firms, trade fair dynamics and export performance. *Asia Pacific Business Review*, (ahead-of-print), 1-17.

Lall, S. (1992). Technological capabilities and industrialization. *World Development*, 20(2), 165–186.

Li, P. F. (2014). Global temporary networks of clusters: structures and dynamics of trade fairs in Asian economies. *Journal of Economic Geography*, lbu009.

Liu, J. & Tylecote, A. (2009). Corporate governance and technological capability development: three case studies in the Chinese Auto industry. *Industry and Innovation*, 16(4-5), 525-544.

Liu, W. & Dicken, P. (2006). Transnational corporations and 'obligated embeddedness': foreign direct investment in China's automobile industry. *Environment and Planning A*, 38(7), 1229–1247.

Lorentzen, J. & Barnes, J. (2004). Learning, upgrading, and innovation in the South African Automotive Industry. *The European Journal of Development Research*, 16(3), 465–498.

Martin, R. & Moodysson, J. (2011). Comparing knowledge bases: on the geography and organization of knowledge sourcing in the regional innovation system of Scania, Sweden, *European Urban and Regional Studies*, 1-18.

Maskell, P. (2014).Accessing remote knowledge—the roles of trade fairs, pipelines, crowdsourcing and listening posts. *Journal of Economic Geography*, lbu002.

Maskell, P., Bathelt, H. & Malmberg, A. (2006). Building global knowledge pipelines: The role of temporary clusters. *European Planning Studies*, 14(8), 997-1013.

Nam, K. M. & Li, X. (2013). Out of passivity: potential role of OFDI in IFDI-based learning trajectory. *Industrial and Corporate Change*, 22(3), 711–743.

Nam, K.M. (2011). Learning through the international joint venture: lessons from the experience of China's automotive sector. *Industrial and Corporate Change*, 20(3), 855–907.

Oh, S. Y. (2013). Fragmented Liberalization in the Chinese Automotive Industry: The political logic behind Beijing Hyundai's success in the Chinese market. *The China Quarterly*, 216, 920-945.

Porter, M. E. (1990). *The competitive advantage of nations*. London and Basingstoke: MacMillan.

Power, D., & Jansson, J. (2008). Cyclical clusters in global circuits: overlapping spaces in furniture trade fairs. *Economic Geography*, 84(4), 423–448.

Rinallo, D., & Golfetto, F. (2011). Exploring the knowledge strategies of temporary cluster organizers: A longitudinal study of the EU fabric industry trade shows (1986–2006). *Economic Geography*, 87(4): 453–476.

Schuldt, N. & Bathelt, H. (2011). International trade fairs and global buzz. Part II: practices of global buzz. *European Planning Studies*, 19(1), 1-22.

Storper, M. & Venables, A.J. (2004). Buzz: face-to-face contact and the urban economy. *Journal of Economic Geography*, 4, 351-370.

Thun, E. (2006). *Changing lanes in China—Foreign Direct Investment, local governments, and auto sector development*. New York: Cambridge University.

Torre, A. (2008). On the Role Played by Temporary Geographical proximity in knowledge transmission. *Regional Studies*, 42, 869-889.

Trippl, M., Tödtling, F., & Lengauer, L. (2009). Knowledge sourcing beyond buzz and pipelines: evidence from the Vienna software sector, *Economic Geography,* 85(4), 443-462.

Van der Borg, J., & Van Tuijl, E. (2011). *Upgrading of Symbolic and Synthetic Knowledge Bases: Analysis of the Architecture, Engineering and Construction Industry and the Automotive Industry in China*. DSE working paper 25/2011, Venice: Ca' Foscari University Venice.

Van Tuijl (2013). *Car makers and regional upgrading in Central and Eastern Europe: a comparison of Renault and Hyundai-Kia*. In Van Dijk, M.P., Van der Meer, J. and Van der Borg, J. (eds.), From urban systems to sustainable competitive metropolitan regions: Essays in honour of Leo van den Berg (pp. 116-131), Enschede: Ipskamp Drukkers.

Van Tuijl, E., & Carvalho, L., (2014). Knowledge sourcing, knowledge bases and the spatial organisation of car design, *Environment and Planning A*, 46(8): 1966-1982.

Van Tuijl, E., Carvalho, L. Van Winden, W., & Jacobs, W. (2012). Multinational knowledge strategies, policy and the upgrading process of regions: Revisiting the automotive industry in Ostrava and Shanghai. *European Planning Studies*, 20(10), 1627-1646.

Weller S. (2008). Beyond 'global production networks': Australian Fashion Week's trans-sectoral synergies. *Growth and Change*, 39, 104-122.

Xi, L. Lei, L., & Guisheng, W. (2009). Evolution of the Chinese Automobile Industry from a Sectoral System of Innovation Perspective. *Industry and Innovation*, 16(4), 463-478.

Yin, R. K. (2003). *Case Study Research: Design and Methods*. *Newbury Park*, CA: Sage.

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