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Trade shows and the creation of market and industry

Patrik Aspers and Asaf Darr

Abstract

This study addresses the question of the constitution of markets in advanced societies. Specifically, the article studies the role of the traveling trade show in creating the real time computing market, which is part of the US electronics sector, during the mid-1990's. Real time computing products assist the transfer, storage and processing of digital signals in real time and support many of the internet applications we use today. By applying ethnographic methods, we explore the general question of how economic actors cope with uncertainty in the phase of market-making and at the cutting edge of technology. The paper makes two contributions to the existing literature. First, it shows that the attempt to organize a trade show in real time computing was triggered by the uncertainty experienced by sellers regarding the identity of prospective buyers and about the exact use to which they would put the emergent technology which is offered for sale. Secondly, we trace the history of an emergent market. We claim that trade shows for innovative products are important venues at which markets coalesce. The identification and ordering of market actors, the institutionalization of a distinct business culture and the social networks developed among market actors and across the subsidiary markets provided the basic social infrastructure for what later became known as the real time computing industry.

Introduction¹

Do trade-shows have a distinct role in creating nascent markets and in the later constitution of distinct industries? Other than general references to the historical development of markets from trade fairs in pre-industrial societies, the existing literature provides no theoretical model of the emergence of a cluster of interrelated markets from trade shows. This study fills the existing void in the literature by examining the role of a traveling trade-show in the US micro-electronics sector during the second half of the 1990's in creating the market for real time computing products. These products, which emerged from various military technologies, support many of the internet applications we use today, such as Video on Demand and various online computer games. This paper, which uses ethnographic research methods, also describes the emergence of a labour market in and around the traveling trade show.

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There is a large body of research that addresses the general question of how economic actors cope with distinct forms of uncertainty (Akerlof, 1970; Beckert, 1996; Knight, 1921), but more importantly, the uncertainty of the products (Callon, Méadel and Rabeharisoa, 2002). This paper shows that attempts to organize a trade show in real time computing were triggered by two types of uncertainties which, we claim, are unique to markets for emergent technology: the uncertainty experienced by some sellers regarding the identity and qualities of prospective buyers, and an uncertainty about the desired use, or application, of the innovative products produced by small engineering firms in a craft-like production mode. The traveling show we studied was designed by its founder to reduce these uncertainties. The concentration of buyers and sellers in a specific geographic location occasioned, in turn, the emergence of forms of collaboration, competition, common identity and, importantly, the constitution of subsidiary markets such as a distinct labour market for technically qualified salespeople of real time computing products. The identification and ordering of market actors, the institutionalization of a distinct business culture and the social networks developed among market actors and across the subsidiary markets provided the social infrastructure for what later became known as the real time computing industry.

This study also makes a contribution in stressing the importance of tracing the history of emerging economic fields, a topic that seems to have attracted little serious study (Fligstein, 2001). We claim that trade shows for innovative products, as well as other market devices (Callon, Millo and Muniesa, 2007), are venues in which the various components of an industry come together. This paper expands the existing literature on trade shows and fairs by demonstrating historically how trade shows constitute several embedded markets which, with time, comprise an industry. We demonstrate that trade shows may also be vital for the perpetuation of markets and industries over time and space.²

There are three interrelated concepts that we use in this paper: trade show, market, and industry. A market is 'a social structure for the exchange of rights in which offers are evaluated and priced, and compete with one another, which is shorthand for the fact that actors – individuals and firms – compete with one another via offers' (Aspers, 2011: 4). Competition, as a form of struggle (Simmel, 1983), is implicit in our view of market, and it may refer to competition among sellers or buyers – or both. Though the term market is probably the most frequently used, our interest is in the other two, since markets are well researched in economic sociology (cf. Aspers, 2011; Beckert, 2009; Callon, 1998; Fligstein, 2001; Fligstein and Dauter, 2007; Lie, 1997; Swedberg, 2005). We define the term trade show as an event which appears with regularity, yet for a limited time on each occasion. The trade-show is typically set up in the form of an exhibition centered on what sellers have to offer. This means that one side of the market, typically the sellers, has artifacts on display, which can be seen by the buyers. In this paper, we define 'industry' as more than a group of products that share some technical characteristics. The term 'industry'

includes the set of actors oriented towards the production and sale in markets revolving around a specific artifact, or a set of artifacts, which are seen by market actors as similar or related. The output of an industry is tied to one single 'core market', and what is sold is what gives the name to the industry, such as 'the car industry'. In addition to the core market and its sellers and buyers, an industry is composed of auxiliary service and labour markets, all of which are embedded in each other. Each industry, as its markets, is characterized by distinct cultural traits which include forms of competition and cooperation among insiders, both firms and persons, accepted scripts of social behavior, and distinct ways of closing a transaction (Phillips, 1994). The culture of a distinct industry provides an actor with clear behavioral scripts which allow her to be seen by other market actors as a legitimate player. As we intend to demonstrate, the traveling trade show studied was the location where the different components of market, and later industry, start to take shape. Next, we review existing literature on trade shows and industries.

Previous research on fairs, trade shows and nascent industries

The modern trade-show has its origins in the county fair. The latter represents an archaic form and place of exchange where different items changed hands within the broader context of a carnival. Such fairs also included artistic performances, gambling, drinking and prostitution (Braudel, 1992: 82–94). The feast may be seen as a forerunner to the fair (Gudeman, 2001: 58). The county fair (whose Latin etymology means 'holiday') was one type of an early 'market' which took place at certain dates and places, and which, for these reasons, can be called a periodic market (Eighmy, 1972; Park, 1981; Swedberg, 2005; cf. Thurnwald, 1969: 162). Fairs were held at least as far back as the 11th century in Europe. In many cases, fairs were traveling markets, which included a large element of festivity and a break from the normal toil of life. Braudel (1992: 82) describes the ancient fairs as 'temporary townships. They did not last for long, but the very number of their participants was equal to that of a town. From time to time, they would set up all their equipment, then when everything was over, move away'. The fair then reappeared according to a well-known schedule. For tradesmen, the fairs meant the opportunity to come together, to trade with each other and to establish social relations and a basic sense of trust. In some cases, the towns controlled the trade-fairs, but in other cases, it was the other way around. In fact, the fairs, once its tradesmen settled down, could be the impetus for the constitution of a city (Braudel, 1992: 83–5). Alfred Marshall stresses the importance of exchanging information at the fairs of the 14th century: 'the great fairs were – like modern Exhibitions – schools in which people learned that the habits and resources of their own villages, and even their own countries, represented but a small part of what went on in the world (Marshall, 1920: 705; Simmel, 1983). In the 15th century, fairs enabled the development of

credit, in the form of bills of exchange, (Greenfeld, 2001: 61); More importantly, fairs enabled people to come together and the networks of traders that resulted from meeting in various places were important for the expansion in diversity and volume of trade over in the 16th century. Marshall sees fairs as events at which items that were made 'in only one or two places' (Marshall, 1961: 267, 746) in Europe were brought together. It is not unlikely that the trust created by trade at fairs was then employed in the nascent financial sector, and this trust may have sparked the emergence of banks (Marshall, 1923: 267). A similar idea is voiced by Weber, who characterizes fairs (*Meßhandel*) as trade in which the goods are present (Weber, 1922: 91). The fair, he says, is a 'prior stage of the exchange' (Weber, 1981: 293), and the permanent fair is an intermediate form of exchange leading to the exchange that we can observe also in contemporary stock exchanges.

The peak of the fairs in Western Europe was in the 17th century, when they were a major engine of the emerging capitalist economy. Fairs gradually lost in importance because of the rise of the permanent trading places and financial centers, most notably Amsterdam. Given this brief historical overview, it is surprising that in the information age and with so many permanent trading places, trade fairs still exist. We will return to this question in our discussion.

The research on contemporary trade-shows is relatively limited. Yet, this does not reflect a decrease in their role in economic exchange. Today, trade shows have moved into large, and often secluded, exhibition halls, and they thereby have become hidden from the eyes of the public, including sociologists. While clearly more specialized in nature, trade shows continue to provide a physical location where industries coalesce.

Skov (2006) has studied trade shows in the fashion industry. Her study of different shows for couture, ready to wear, and textiles, each catering to a specific market, illustrates how the fashion industry is composed of several markets embedded in each other (White, 2002). A market implies competition, which is to say that the evaluation of the offers is facilitated by spatial proximity, and the 'modularity of exhibitions units creates the conditions for a direct comparison of different companies against the backdrop of similarity' (Skov, 2006: 767). Entwistle and Rocamora (2006) have also analyzed the fashion industry, focusing on the London Fashion Week. They argue that this trade show makes the industry, its boundaries, and its actors visible to themselves and to others.

The spatial distribution of exhibitors in a trade-show is not the only means to create a market. For example, colored badges carried by the participants in the fair create a collective identity, but also social distinctions between the market actors as a way of making it easy for those who attend to 'match' their interests (Entwistle and Rocamora, 2006: 741; cf. Weber, 1946: 308). Awards for the best design of garment, a chair or any other items exhibited are typical of trade shows. Trade shows are also an integral part of the labour market in these industries (Power and Jansson, 2008: 437–8). The shows are of value for both recruiting firms and for individuals looking for new positions. In addition,

there is also a socializing aspect of catching up with old friends. All this takes place inside, but also outside, the actual halls of the show, for example in bars, restaurants and on the dance floor (Power and Jansson, 2008: 433).

Some of the studies mentioned above illustrate and explain the ordering of industries through status displays (Podolny, 2005), and the status order of the exhibitors at the show (Skov, 2006: 768). Cognitively, actors must share a common perception of what the industry is, maintain a physical proximity, and agree upon forms of collaboration between insiders. These elements create a sense of solidarity among the market actors, which is central for the creation of a market (cf. Kennedy, 2005; Kennedy, 2008; White, 2002; Zuckerman, 1999). The culture of the industry, essentially the normative structure and the behavioral scripts which characterize specific industries, also takes shape in part during trade shows.

Thus, trade-shows were arenas for generating trust, the foundation on which all contracts rest (Durkheim, 1984). They also had the potential to stimulate urban development, as well as markets and industries. Hence, the studies which we reviewed so far inform us that a trade show is much more than a display of items for sale; it is a place of knowledge distribution, and a location where buyers and sellers strive to reduce the array of uncertainties they encounter and to foster a basic sense of trust. Trade shows are also a site for industrial 'espionage', and a place of networking by establishing and upholding contacts with business partners, as well as with potential clients. Trade shows provide a symbolic stage for market actors, ie, firms and individuals, to demonstrate economic might to both the other exhibitors and the visitors as an audience. The public demonstration of technology is also an important aspect of marketing (Rosental, 2005).

The explanations which we offer about the role of trade-shows in shaping embedded markets and then an emerging industry start with a description of two specific forms of uncertainty which plagued the nascent market for real time computing in the mid 1990's: uncertainty regarding the identity of prospective buyers and uncertainty regarding the nature of the products and their uses. The uncertainty experienced by both buyers and sellers in turn shapes patterns of social relations among the sellers – collaboration as well as competition – and ties among sellers and buyers. We will demonstrate how the pattern of interaction among market actors orders the industry and reduces the uncertainty experienced by sellers and buyers.

In addition to the questions of uncertainty and the emergence of market and industry, we also aim to expand existing knowledge by posing the following questions: What role does the physical space of the trade show play for market actors and for the formation of a market? What role do social activities during the show play? To what extent are competition and collaboration present at trade shows? If and how are values inscribed into the trade show's formal processes? What is the function of the trade show for the labour market of an industry? Before we address these questions we present our research field.

The field of real time computing

The Real Time Computing sector is part of a larger field called Digital Signal Processing (DSP). Real time computing products are involved in the transfer, storage and processing of digital signals as they occur. Products in this industry often become part of larger technological systems such as test equipment, video-on-demand and computer games. Initially, applications in this field were developed for, and often by, the US military or other government agencies. For example, electronic detection and surveillance of enemy radar is based on real time computing technology. Since the late 1980's, and increasingly during the 1990's, the number of small engineering boutiques producing civilian applications based on real time computing technology has grown rapidly. These more recent applications allow computer networks and computerized production to proliferate. Many of the Internet applications we use regularly are based on real time computing technology.

By the mid 1990's, much of the trade of cutting-edge products in real time computing was conducted at a specific traveling trade-show, nicknamed by its participants 'The Traveling Circus', which was held more than 40 times a year at different cities across the US. In the late 1990's the show became global and also took place periodically in major western European cities. The story of the show told below is also the story of the making of a market and consequently, an industry for real time computing products.

Research setting, design, and methods

We were fortunate to study this industry from its initial stages and to witness its growth along the years. We can also demonstrate that trade shows in this industry still have an important role today. The ethnographic depiction of a traveling trade show is part of a larger comparative study of sales work in a market for emergent technology conducted by Darr (2006). The study was carried out in the U.S. during the second half of the 1990's. The data for the comparative study were collected over the period of one year. As part of the study, 62 representatives of buyers and sellers, including sales engineers, field application engineers, salespeople, purchasing agents, and design and test engineers were interviewed. The interviews lasted about an hour each and were tape-recorded. Fifty-four interviews were transcribed in full and eight were transcribed in part. In addition, Darr documented interactions between sellers and buyers at six trade shows, two of which were in a mass market for standard electronics products, and four in the real time computing market. At the displays, he observed and documented in field notes over 100 interactions between sellers and buyers in the two markets. He also surveyed salespeople in the traveling trade show. The questions focused on the careers and educational background of the sellers at the show. Finally, short conver-

sations with visitors to the show were conducted on site to learn about the occupational background and the types of uncertainty encountered by the buyers.

Overcoming client and product uncertainty

The study of the interrelation of market uncertainty and economic action has been a point of convergence for economists of information, economic sociologists and anthropologists. A look at this literature suggests that different cultures tend to develop distinct forms of economic action to reduce their uncertainty regarding product quality, business partners and cost. Geertz (1978) for example, describes the practice of clientalization in the Moroccan Bazaar as the tendency of buyers to establish social relationships with certain sellers and to repeatedly buy from them, as a coping strategy in conditions of high product uncertainty. Gambetta (1993) portrays how the local Mafioso becomes a middle man, for a commission, in a horse market in the late 19th century. The Mafioso assists sellers and buyers to reduce their market uncertainty, by providing assurances, backed by the threat of violence, about the quality of the horse as well as the buyer's timely payments to the seller. In contemporary USA and Europe, Smith (1989) depicts public auction as an uncertainty reduction mechanism designed to establish a product's value within a community of experts in a specific place and time. Aspers (2010) has studied the status as a way of ordering markets. Lucien Karpik (2010) has analyzed the role of what he calls 'judgment devices', that is, social inventions that help actors in markets to form opinion on the quality of the traded object. As we will demonstrate, the types of uncertainty in the emerging market for real time products go far beyond product quality and cost, and focus on more basic issues such as the identification and ordering of a body of sellers and buyers and the uncertainty regarding the basic features, design and capabilities of the emergent technology being sold.

Actors who take part in the early phase of market constitution need to know who is in the market, what role they and others occupy, and what is traded. 'The Traveling Circus', the first and main trade-show in the real time computing sector, was established by an owner of a small high-tech firm who, as he described in a telephone interview, wanted to ascertain his potential clients, as there was no public arena at the time to identify and socialize with them as a group. The first show he organized was very successful, since apparently he was not the only producer who suffered from what we will call 'client uncertainty'. The founder soon abandoned his small engineering firm in favor of running the trade show, and he hired a specialized workforce to assist him. Within a few years, the show was held all over the USA, and became a periodic fair. Information about how to participate in the trade-show was circulated in two main ways. Advertisements for the traveling show were placed in specialized journals of real time computing. Second, information travelled by word of

mouth, from vendors who participated in the show to other vendors in the field who met at other shows within the field of Digital Signal Processing.

The idea behind the traveling trade show was to bring cutting-edge technologies in the emerging real time computing sector to the doorstep of prospective clients, who mainly consist of design and test engineers working for very large corporations and government agencies such as NASA, General Electric and Xerox. Clients were typically very large corporations, since they had to sponsor a vast labour-intensive and costly customization process of the original products on sale, to adapt them to their specific needs. Thus, the person who initiated the show created a periodic marketplace, and thereby provided a central element which gradually became a set of interrelated markets which provide the infrastructure for an industry. This initial organization of the markets was, indeed, an entrepreneurial action (Schumpeter, 2000: 51).

Trade shows were acknowledged by sales, test and design engineers and firm managers who participated in them as an efficient way to overcome client uncertainty. As one experienced sales engineer in the real time computing industry explained, referring to his start-up company: '... One thing we have learned from participating in trade shows is to understand who our potential customers might be'. He said that they did not know this before they attended the show, and then added:

On the basis of the shows we have attended, we had a tremendous amount of travel lately ... we have learned what they [the clients] need, how [the] Dell [people] differentiate themselves from IBM, for although they all offer PC's, they see themselves in different ways.

The informant makes two important and related points. First, for him the trade show provided an opportunity for sellers and buyers to interact socially, to get to know of each others, but also to get to know each other. Second, this excerpt exemplifies the range of client characteristics in which the vending companies were interested. While interacting with prospective clients, the vendors attempted to understand the types of products on which they worked, and what sub-section of their prototypes they might need from the vendor. Second, by interacting, vendors were able to map out the diversity on the buyers' side, but also establish their collective identity as sellers of real time computing components. In this field, as in any field, actors made use of cultural tools to set themselves apart from rivals. It is by this interaction that participants in the trade show could learn about, for example, the unique political landscape in clients' organizations. Consequently, it was not uncommon to hear a sales engineer asking a visiting engineer who in his company would have to approve any future purchase, how the purchasing process evolved, and who reported to whom. In more theoretical terms, the trade show facilitated a complex process of differentiation of buyers and sellers.

What was the experience of sellers and buyers participating in the traveling show? The shows were mainly held in very large ballrooms of major hotels.

Approximately 40 companies displayed their products on simple- and identical tables covered with a standard white piece of cloth. For about \$500, a vendor could participate in two shows held in two adjacent cities within a single week. There are, of course, many different ways such a trade show could be organized. It was clear that the road taken in our case reflected the egalitarian values of the founder, values that are shared by others in this young industry. For example, from its initial days, as explained by the founder, the show was designed to favor the interests of small firms operating in the real time computing market and not already established and larger companies trying to penetrate, and possibly take control of, the emerging market. No company, regardless of the amount of money it was ready to pay to the show organizers, could display its products on more than one table.

Typically, a traveling trade-show in real time computing was held in the downtown area of a large city, near potential clients such as Xerox Corporation in upstate New York or Texas Instruments in Houston, Texas. The show organizers issued formal invitations to each show and the vendors were responsible for sending these invitations to their existing or potential clients. The majority of the visitors were engineers, but mediators between firms and potential clients were also invited. The practice of sending private and personal invitations insured the creation of a collective social capital within the emerging market. It also encouraged the creation of a specialized body of buyers that increased the chance for successful encounters, compared to more general trade-shows which admitted whoever was ready to pay for admission. The show was carefully designed to encourage the local engineers working for these large corporations, who received the invitations, to visit the show, mainly during their lunch breaks, and to walk around the display tables organized in two or three long isles. Admission to the show and parking were free. The most important fringe benefit that was offered to the visitors was a free lunch.

Market actors in industries include not only buyers and sellers but also mediators of exchange (Moor, 2008). For example, at one of the shows, a sharply-dressed man, who thereby stood out from the other attendees, walked around, talking briefly with some of the vendors. It turned out that he worked for a local office which represented manufacturers in the field of electronics in the city where the show was held, and that he was looking for companies his office would be interested in representing. As he put it: 'Conversations I have here with vendors give me a chance to establish a common ground and make a little better relationship'. This person, like many of the sellers and the buyers, was also an engineer by education. Thus, the trade show was also the location where mediators operated and established their social networks of representation, suggesting that it is an important site for the creation of the social foundations of a market, as Durkheim has already pointed out.

The traveling show propelled the creation of the real time computing market in yet another way. It made the existence of an emerging market public, by providing a physical location as well as a symbolic stage which appeared with some regularity. For example, the show allowed the various

actors to know who was 'in' the market, and to assign specific roles to them. In addition, the show allowed the actors to learn about the type, range and technical complexity of the products offered for sale, and thus to get a better sense of the boundaries of the emerging market and the potential applications of its products. To the actors, it was a recurrent event manifested in spaces – exhibition halls – that helped to create a sense of collective identity and shared understanding of belonging since the same people come together again and again to constitute the roles of sellers and buyers. We turn now to describe how the trade show assisted in reducing client and product uncertainty.

The visitors to the trade show, mostly young male engineers, found out while walking through the display tables that they were unfamiliar with many of the products on display and with the vendors, who were representing small engineering firms from different parts of the USA. Here is an example, given by a seller in the trade show, reflecting the way he understood the experience of the visitors or buyers at the show:

What you are going to see at trade shows is people who are exposed to something for the first time. In other words, they go to the show looking for something, and they are going to come to a booth with something they are going to think is what they want. And they want to be pulled in [by the vendors] and they are going to be shown the product.

The innovative products on display were typically produced by small engineering boutiques in a process resembling craft production during the pre-industrial era more than mass production. In fact, one might claim that the visitors' uncertainty was typical of the feeling of a visitor to a local market in pre-industrial societies, such as the Moroccan Bazaar described by Geertz (1978). This form of uncertainty is not uncommon in the starting phase of market or industries. In fact, when there is no way to determine what is valued in the 'market' one can hardly speak of a market or industry at all. In other words, there is no order in the emerging market as long as it is unclear what is offered for sale (Aspers, 2011). There are, in principle, two ways of establishing order in a market. The first is to make sure that the product is standardized, so that all actors can orient themselves to this product. In our case, the innovative products were hardly standardized, since their exact use was still unclear. The other way is for buyers to have a stable social structure with sellers with known identities who are ranked in relation to each other (White, 1981). But in emerging markets and industries, neither the product nor the social structure is stable enough to establish order. In cases like ours, the first step toward order occurs when some actors leave the traveling trade-show, as they realize that this is not what they do or need, at the same time as others are attracted to it. Thus, we cannot think of an industry constitution as a process of discursive change; it is the practical interaction of humans in trade shows who are tied to organizations and who engage in daily boundary work which constitute the baseline of markets and then industry.

The products themselves also have an important role in shaping the structure and content of social interactions at the trade show. Let us look more closely at the product to clarify its role in the process of constitution of markets.

Since the products offered for sale on the display tables represented cutting edge technologies, the visiting engineers often found it hard to assess the quality of the products on display, their production costs, and if their going prices were reasonable. In addition, they suffered from uncertainty regarding the expected use of some of the products on display. To use the terminology developed in technology studies, the products for sale enjoyed what has been called 'interpretive flexibility' (Wiebe, Pinch and Hughes, 1984). That is, different social groups, buyers and sellers in our case, had different interpretations of the use of these products. The visitors to the show soon realized that they had to engage in intense technological conversations with the vendors, standing next to their display booths, in order to reduce the uncertainty created by the question: What exactly is the product and how can we use it?

Vendors, in turn, suffer from product-related uncertainty. They are also uncertain about their peers, about exactly what they should offer, and about whom their clients will be. A central part of being in the market is to establish contact with the right people, but it also means avoiding contacts that lead nowhere. The following excerpt from a discussion with a veteran vendor at the traveling show clearly makes this point. This vendor had experience from a less specialized and much larger show in electronics in the south of the USA, and gives one example of what could happen in those less specialized shows:

A cowboy came up to me and listened carefully to my explanations on one of the [circuit] boards. He then picked the board up, and looked very thoroughly at the metal frame. He pointed to two small pieces of metal coming out of the frame and asked me very seriously whether they were microwave antennas.' [*The informant bursts into laughter*].

To further increase the likelihood of matching appropriate participants in the trade show, a signaling device, the name tag, was designed to quickly and efficiently connect vendors with the most suitable buyers. When visitors registered at the entrance to the show, they were given a special name tag, with their names and the name of their companies in clearly visible fonts. While the visitors walked through the aisles and observed the display booths the vendors could approach those who they felt were potential buyers. 'Hey, Robert, how are things at GE?' was a typical opening line used by the sales engineers to initiate sales interaction.

A further aspect of the constitution of the trade show is its culture. There are many informal rules of 'how to do a show'. Here is an example given by an experienced sales manager who had participated in many trade shows:

A lot of people do not know how to do shows. . . . You really have to make sure you have your customers in and out [of the stands] quickly . . . so the

shows are really there to give you the most benefit for the buck, where you get exposure to a lot of people very quickly, and then you follow the regular sales process. It is usually critical, the very beginning of the sales process.

It is important to note that the vendors did not expect to sell the product at the show, but rather to ignite a sales process, which in practice means to create a small database of what they called ‘qualified leads’ – basically names of firms and contact people whose applications seemed most promising. In this sense, the trade show was only an initial stage in a long sales process, sometimes lasting several months, and occasionally even more than a year. While interacting with potential clients at the show, the vendors initiated a series of screening questions to the buyers to determine if their product could become part of the prototype the visiting engineers were designing. Since most products offered for sale had to be customized according to the exact way in which the buyers needed to use them, the feasibility of the customization process became a major source of uncertainty for both sides of the transaction.

To reduce the uncertainty for both buyers and sellers, the vendors often used product demonstrations which assisted the potential buyers in inspecting the functioning of the software or hardware offered for sale, and also assisted the vendors in understanding the way in which the buyers wanted to use the product. The product demonstrations were also an occasion to transfer contextual elements of knowledge about the product and the client’s application in search of a feasible customization process. The traveling show was designed to assist the buyers and the sellers to reduce the different types of uncertainties they might encounter. At the same time, the show also provided a symbolic stage on which market actors could perform a diverse set of social roles.

A symbolic stage for an emergent market

It is a simple fact that the real time computing industry could only have become an industry given the spatial concentration of interacting sellers and buyers in the trade show. These interactions enabled socialization and comparison of different offers and strategies of participants. This physical location was also the symbolic stage on which ingenuity and economic might were publically displayed, with both visitors and other vendors acting as an audience. Participation at the show was in itself a symbolic indication that the company was alive and well. This is, after all, a sector with a staggering failure rate for new businesses during the first five years of their existence. Failing to participate, as one informant pointed out, might be interpreted by other vendors as an indication that the company had run into financial difficulties. As one vendor in the show put it: ‘Being in the show in such a specialized market signals that the company is alive and well. Not having a booth in the show might be interpreted by clients as a bad sign.’

We previously noted the democratic ideals of the founder of the trade show. Another attempt to minimize the impact of large companies was evident in the methods the organizers devised to distribute the display tables. According to one of the trade-show staff, in the initial stages of the show, vendors simply lined up at the door the night before the opening and were admitted in that order to choose their desired table. When the number of participants grew, to prevent quarrels among the vendors queuing at the entrance door, the organizers instituted a new system of allocating exhibition spaces. The vendors were admitted to the exhibition hall according to their order of registration (and payment) for the show. This was still a rational and fair way of distributing value within this emerging community of equals. Though other shows allowed an exhibitor to pay a higher fee for a better space, this strategy was not accepted in the travelling show studied.

Socializing and networking

A trade fair has its own culture and unique forms of socializing and networking. As in the case of the traveling trade fairs in the late middle-ages, food and drink were an important part of the traveling show in real time computing. But in this case, food was more of a strategic element rather than pure entertainment. In addition to the free lunch for sellers mentioned above, many of the vendors met the evening before and after the show at the hotel bar, gossiping with other vendors. The festive spirit of the show was also manifested in the traditional golf tournament that was partly sponsored by the organizers of the show.

The show organizers also established a cash prize to the company which invited the largest number of visitors who actually ended up attending the show. The competition itself was a form of game, and it explicitly involved the use of the prize for drinks at the bar with the other vendors after the show. This is expressed in the following example of an announcement made by the founder and organizer of the trade show at the end of one of the shows in Texas, close to 3 p.m. and after the vast majority of the visitors had already left the hotel ballroom and while some of the exhibitors were packing up their display tables:

Show organizer: Allow me to interrupt you for a second. My name is Steve Blackwell, and this is our fifth year in Texas. And we had a good day today, . . . the number of guests today was 303. Ahh, and for those of you who are accustomed to the free show and the \$250 cash prize, we have come up with a new program that kind of spreads the wealth a bit, and what we have done is the first prize winner for attracting most guests to the show . . . is Lightning Systems and what we will give them is \$100 plus a free show, so representative of Lightening Systems [*with a hand gesture he invites them to approach him and receive the cash prize. People on the show*

floor clap their hands.] Now to the second prize, the second prize is \$75, this is for having a good time at the bar this afternoon. And that goes to Iron Strength. [*People around the winner say 'now you can invite us to the bar'*].

Note that the founder presents the cash prize as a way of spreading the wealth around, and thus promoting egalitarian values and a sense of community. This solidarity may be central for the establishment of an industry.

This excerpt is also an indication of the important role of food and drink in the show. Harrison White suggests that market actors gain information 'over luncheons with others in the trade, from trade associations, from one's own customers, and so on' (White, 1981: 519). In other words, gossip (White, 1993: 167) is an integral dimension of an industry; to know what goes on, who has closed a deal, or who has a new invention up his sleeve, means that you are part of the industry.

Collaboration and competition

In the early phase of their existence, survival is the primary aim of firms, and for those that survive, profit may gradually become the dominating concern. As in any market, buyers in the trade show take the opportunity to compare the offers that are on display. Here, we will not focus on competition, a well-known theme, but only mention that competition may also find ways that are illegal. The openness and transparency of trade-fairs is important for ideas to spread, collaborations to be established and much more, but it also has a downside. The old county fairs attracted businessmen from all walks of life, not all of them motivated by virtues. In a similar way, the traveling trade show can serve as a site for different forms of industrial espionage. For example, a salesperson in the traveling show explained that after he left his previous company, a person he knew who worked for one of its competitors, as he put it: 'tried to pump information out of me about the new line of products Lectronix [*his previous firm*] is working on.' The informant claimed that he refused to provide the information. In a second example, a sales engineer mentioned how he was sent to the traveling show pretending to be a potential client in order to learn about the products of a competitor by simply asking many detailed questions. Despite competition and a few attempts at industrial espionage, the trade-show was still an important location where collaboration took place.

By taking part in several shows, people established relations over time, which are central for creating trust. These relations also served as grounds for further collaborations and development of products. Many actors thought it better to join hands and face the uncertainty of the market and the hard pressure of rapid technological advance together with a partner firm. How did they accomplish this? First, we should remember that all the vendors were in a similar situation the morning of the show: waiting to see, with great antici-

pation, what firms might become their clients and what products they might be able to sell them. In fact, one vendor described the show as a lottery system and his feeling on the morning of the show as the feeling of waiting to learn if and what prize he would win at the end of the day. This equal position of different vendors at the show created a basic sense of solidarity, clearly expressed in this short conversation between vendors waiting at their display tables for the first visitors to arrive:

Vendor A: Are you going to stick around all day, Bob?

Vendor B: Yes

Vendor A: Well, let's knock them dead!

This excerpt captures the excitement, anxiety, and hope, as well as sense of a shared goal, of the two vendors. Their similar position in the market (Burt, 1992) might explain some forms of cooperation. Yet, when asked about possible reasons for collaboration among vendors, a sales engineer offered two additional reasons. He said that each of the salespersons might want to seek future employment with the competitor, so they wanted to maintain good relations with them by sharing information. A second reason for collaboration is the high level of specialization and the lack of industry standards in real time computing at this stage in its development. During the trade show, the vendors learned about the products offered by other small firms in the industry, and sometimes this knowledge helped in creating necessary synergy.

The important role of cooperation among vendors first became apparent in a regional trade show in Boston, and then also in the smaller traveling show. In the regional show, which included a greater number of firms with a much wider range of products than the traveling show and which was more international in nature, one of the organizers reported in an interview that one of the most interesting features of the show is the fact that participants do lots of business among themselves in addition to the business they conduct with clients. She gave an example of a show they organized in which one company did enough business with other firms participating in the show to cover all the expenses of the show, a few thousand dollars.

Because the show involved vendors of software and hardware, they tended to form new alliances at the show as they were exposed to new ideas and products that could be integrated with their own. This, as in other forms of collaboration, required vendors to study the products of the other exhibitors. This they did during set-up time and while waiting for potential clients. For example, during set-up time at the traveling show in Dallas, Texas, Darr walked around the displays and noticed two vendors who seemed to know each other. One of them said to the other: 'Hey, how are you? Listen, you must get this stuff [*points to a circuit board on display in his booth*], tell your boss.' Then, another salesperson approached, and the two of them exchanged business cards. Based on these examples, it is clear that the traveling show is indeed a place where collaborative ties are constructed; these provide means for trust

to develop and mutual values and beliefs to become shared and institutionalized. Such collaborative ties, despite their transitory nature, provided the initial basis for the emerging market.

The constitution of a related labour market

The traveling trade show is not only the location for the exchange of goods and services and the formation of collaborative ties. It also provides a physical location where the vendors learn about employment opportunities. Gossip, exchanged mainly in social gatherings at the bar or during informal meetings among vendors who tend to collaborate and who trust one another, is the main means of transmitting labour market information. For example, a salesperson might tell a colleague that his company is seeking a new head of development or a salesperson. Following Granovetter (1974), the importance of having many weak ties among the vendors may be the key to optimizing the recruitment or job search process. It is the trade show which allows the creation of these important weak ties.

Despite the early stage of development of the real time sector, many vendors in the show knew each other from previous shows, and some of them even had worked together in the same firm in their previous jobs or collaborated in the past. As one of them explained: 'Yes, we know a lot of people here, everybody knows each other'. He then added:

In fact, when Kbox [*his previous company*] stopped going to the [traveling] shows I was very disappointed. The last show I did for Kbox was the Dallas show last year. And after that we did no more trade shows. And you know, it was a little disappointing. Because when I got back into the circus . . . I was very glad to see everyone, people I have not seen for a while, and they will all go 'ohh, where have you been?' you know. It is funny . . . the turnover [*rate in this industry*]. People move from company to company every couple of years.

Note that the salesperson acknowledges the social bonds, which are constructed among the sellers through the shared participation and experiences at the show. He also mentioned that he had changed jobs quite often, but, given his specialized set of skills, and like many of his fellow sales people, remained within the real time computing industry. Based on previous social interactions at the shows, the information about employment opportunities is transferred between vendors whose booths are adjacent, and in social gatherings in the evening before or after the show, while drinking together at the bar. One of the informants, a vendor who regularly participated in the traveling show, described his own experience and said that he got his current job while participating in the real-time show. While working in a job he did not like for a company that participated in the show, he approached the vice president of

his current company, whom he knew socially through his participation in previous shows. The informant asked him about job openings. It turned out he was looking for an employee, and the informant was hired on the spot.

The emergence of a labour market around the trade-show and the fast turnover in this nascent sector underpinned a sense of community and loyalty among the technical salespeople. After all, in this highly risky industry, where small engineering shops struggle to survive, the occupational community made up of network ties characterized by reciprocity and the appreciation of technical dexterity provided much more stable support than the employing organization. This is quite common in industries where the knowledge and trust of the trade is tied to people, rather than organizations. Trust in large organizations, without direct references to specific persons within the organization, is only to be expected in cases in which the firm has a proven track record over extended periods of time (Powell, 1990). Obviously, a generalized trust in organization is not what we observe in the environment of a nascent market. Consequently, in addition to direct economic incentives, the shows foster a spirit of solidarity among the technical salespeople. This spirit of solidarity facilitated collaboration and shared practice, and underpinned their willingness to engage socially and to enhance their collective social capital.

Conclusions

We set out to explore the role of trade shows in the shaping of nascent markets for emergent technologies. Our main and most general theoretical conclusion is that the traveling show had a central role in the creation of the real time computing market. First, the organization of the trade show allowed market actors to reduce the two types of uncertainties that are typical of emerging markets for cutting edge technologies. Second, while some ties were probably created directly between individual sellers and buyers in the course of designing a product, the trade show allowed a group of sellers to become acquainted and to learn about the identity of a set of prospective buyers. The trade show also assisted the assessment and comparison of the technical qualities, capabilities and design of a defined set of products which were traded in this emerging market. The collectivity of buyers and sellers could then develop shared norms and perceptions of the socio-technical boundaries of the emerging market.

The trade show provided a stage on which market actors could interact. The social engagement at the show created ties among participants within a short time frame. While competition is an important, and often implicit, element of market dynamics, we can see that the social encounters provided the basis for social networks based on trust and cooperation (Durkheim, 1984; White, 2002). These networks, in turn, provide a social infrastructure for emerging markets and industries. With the creation of these trust-based networks, the sellers and buyers could engage in a more efficient, and straightforward search

for information, highlighted by economists and economic sociologists, about the quality and current prices of products offered for sale.

This study also demonstrates that the traveling show brings subsidiary markets together. For example, we described how a specialized labour market developed during the trade-show and around the main market for real time computing products, as sellers shared information about job opportunities, often in the form of gossip which was only open to insiders. Thus, the trade show stands at the center of a series of nested markets which, taken together, comprise an important pillar of what has become an emergent industry.

The trade show was also the location for intensive boundary work. During social interactions at the show, distinctions were made between those in and outside the markets. Through social interactions, order was also gradually established, as buyers, sellers and mediators of exchange performed distinct roles in the market and positioned themselves and their products vis-à-vis other market actors. This initial order, in turn, increased predictability and facilitated calculation and planning. By describing the process of establishing order in the emerging market from the early phase of orientation, and by demonstrating the constitution of collaborative networks, we were able to further establish that trade shows are an important venue of market creation. A correlated culture of the trade show and the market, including dress, behavior and other scripts, could gradually emerge.

The role of trust and business culture which started to emerge at the traveling show is connected to the physical closeness among actors that the trade show generates. Social capital was established at the show and the exact features and future uses of products on display were negotiated. Like the trade-fairs in early modern Europe, the traveling show represent the core market brought together spatially for a concentrated period of time. The trade-show also provided a symbolic stage for small firms to exhibit technical know-how, viability and economic might, by their ongoing participation in the shows. We have also described the initial stages of the real time computing industry partly as an entrepreneurial act leading to the creation of a community of practitioners. When buyers and sellers first met at the traveling show, they began to recognize and consider each other as members of a distinct community. They engaged in the evaluation of moral character as well as technical dexterity. Social cohesion, a second stage in market creation, was actively fostered by the organizer, who initiated such activities as the golf tournament and the cash prize at the end of the show; the latter was typically used to invite other exhibitors for a drink at the bar. These activities, coupled with the adoption of democratic values, and the dynamic exchange of technical knowledge and know-how among the sales engineers, were institutionalized into the structure of the trade show, thus promoting even further the norm of a community of equals.

Finally, the increasing digitalization of work and commerce and the proliferation of the internet have cast a shadow over the future of traditional forms of trade-shows. After all, the internet allows the efficient production and

dissemination of information in diverse forms, and sellers and buyers can share knowledge about product quality, design and cost across the globe without the need for social interaction. Yet, our study suggests that contrary to common wisdom, the more archaic face-to-face encounters between sellers and buyers at trade shows are actually expected to increase, rather than decrease, with the growing pace of technological advance. In emerging fields where cutting edge technologies are traded, the highly qualified sellers and buyers need to establish basic trust and a basic order by engaging in intense technological explorations carried out through an interactive face-to-face engagement with their peers. During the trade show, the sales engineers and engineers working for prospective buyers begin to negotiate the customization process, and to assess the technical and economic feasibility of specific applications. The establishment of basic order and the initial constitution of collaborative networks and trust among market actors require the communication of contextual knowledge which is deeply rooted in engineering practice. Social engagement, an interactive dialogue and the shared practice during product demonstration are the most efficient ways of communicating this contextual knowledge. As long as trade-shows continue to provide a social space designed to facilitate the transfer of contextual knowledge, and provide the locus of product and labour markets, the traditional form of periodic yet intense face-to-face encounters in a specific geographic location are likely to continue to proliferate.

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Notes

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- 2 The paper does not claim that industries are shaped only by trade-shows. We do not account for other aspects that also make an industry, such as the production process, business magazines, competing industries, the history of the industry, and how the industry is represented in the eyes of the general public.

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