

# Introducing Innovations: The Geography of Market Intermediaries in Cultural and Science-based Industries

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**Abstract:**

This paper investigates the nature of uncertainty associated with introducing novel, knowledge-intensive products, and presents two major findings. First, the process of creating and capturing markets is structured around a set of intermediaries; and second, the social and geographic distribution of these intermediaries is different for cultural and science-based products. In both cases, local and global intermediaries that are able to evaluate and validate these innovations play important roles in determining the likelihood of successful adoption and acceptance in the marketplace. However, emerging research on differentiated knowledge bases suggests that the process of knowledge circulation operates differently for different types of knowledge-intensive activities. This paper presents findings from case study research on theatre and vaccines that suggest that these knowledge characteristics have a significant impact on the geographic distribution of validating expertise. Although intermediaries in the local marketplace, such as medical associations and the media, are important sources of validation in the case of vaccines, we tend to find validating market intermediaries for new theatrical works in global nodes of excellence, rather than local marketplaces.

**Key words:**

Innovation, market development, knowledge bases, intermediaries

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*“Innovation is a process by which new products and techniques are introduced into the economic system”*  
(Schumpeter 1934)

*“A common feature of an innovation is that it must have been implemented...A new or improved product is implemented when it is introduced on the market”*  
(OECD 2005, 46-47)

The definitions above imply that innovations must be effectively communicated to others and be perceived as ‘useful’ and ‘valuable’, otherwise they are mere novelties that do not contribute to overall progress. Diffusion is therefore a critical step in the innovation process, and one that was examined in considerable depth half a decade ago by scholars in economic geography including Torsten Hägerstrand (1967) and Larry Brown (1975, 1981). More recently however, research has predominantly focused on the production-side of innovation in the knowledge economy.

Although we have learned a great deal about the (local) sources of innovation and the (local) conditions that facilitate their combination into new and useful products, the body of research in innovation studies and economic geography tends to assume that new knowledge-intensive products are readily accepted, absorbed and adopted. Furthermore, we know relatively little about the forces that influence their successful adoption and uptake in the marketplace. In this paper I examine the process of market development and product validation in two illustrative knowledge-intensive sectors.

### **Introduction**

Much research on the geography of innovation has focused on the production-side of innovation systems, or the top arrow in figure 1. In today’s economy, knowledge is considered one of the

most important inputs, and learning the most important process (OECD 1996). Characteristics that influence the ease of transferring knowledge between different economic actors therefore have an enormous impact on the social and spatial organization of economic systems.

Knowledge that is predominantly tacit for example, is very difficult to transfer out of the context in which it is embedded (Winter 1987). This knowledge is therefore considered “spatially sticky” and accessing it requires direct physical interaction (Amin and Cohendet 2004). The vast amount of research on learning regions, clusters and regional innovation systems illustrate that the *social* foundations of the innovation process have significant *spatial* consequences.

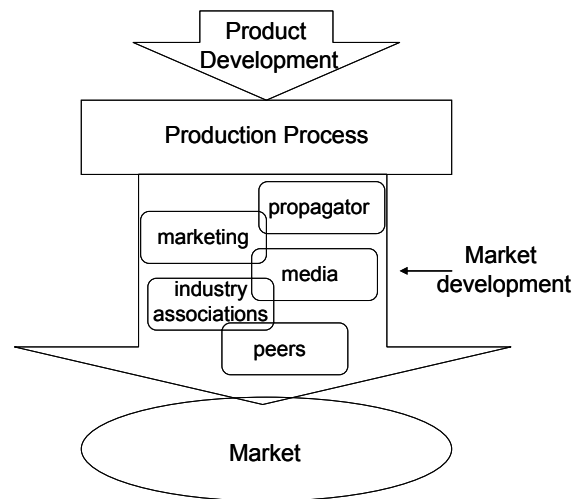
The adoption-side of innovation systems (or the bottom arrow on this diagram), is much less well understood. From research in other social sciences we learn that the uptake of knowledge is prone to challenges and failure. Findings in cognitive psychology and sociology for example, suggest that new information is more likely to be adopted when it fits within existing frameworks, and when it comes from a source that is perceived credible and reputable (Piaget 1928, Merton 1968, Katz and Lazarsfeld 1955). The introduction of new products is therefore also likely to depend on such credible and reputable intermediaries who can mitigate the uncertainty associated with novelty.

Adoption, seen in this way, is a process that is neither solely driven by inherent qualities of the innovations nor by individual attributes of potential adopters. The main research question that arises from this line of reasoning is: What social factors shape the process of introducing knowledge-intensive products to the market, and what are their spatial consequences?

## Uncertainty

One of the key features of innovations is uncertainty: “Innovation involves uncertainty in an essential way, and the institutional structure supporting innovation varies greatly from sector to sector” (Nelson and Winter 1977). The presence of this uncertainty, in particular with respect to value, shapes the actions of both producers and consumers. Consumers search for knowledge and validation to inform their adoption decision, a process that Rogers (2003) describes as an ‘information-seeking and processing activity’ to reduce uncertainty about the advantages and disadvantages of innovation. At the same time, this paper will illustrate, producers attempt to manage and shape this information-seeking process. The marketplace thereby functions as a communication network “through which producers engage consumers in two-way negotiation about products” (Cornish 1995, 334), and this involves a number of intermediaries. In addition to traditional categories of actors such as the innovation propagator and a marketing partner (which played central roles in Brown’s work on diffusion agencies), these intermediaries include members of the media, support organizations in the industry, as well as user groups such as early adopters, opinion leaders and peer networks (illustrated in figure 1). After investing a lot of time and money in the development of a knowledge-intensive product (which may or may not provide a return on investment), producers do not simply ‘release’ new products, but carefully prepare the marketplace in which these will land. Local and global intermediaries that are able to validate these new products play important roles in reducing the uncertainty associated with novelty, and they therefore determine the likelihood of adoption and acceptance in the marketplace.

Figure 1: The market development process



### Differentiated knowledge bases

The research presented in this paper examines the intermediaries and institutional mechanisms by which uncertainty is reduced, and more specifically whether this is different for different knowledge-intensive industries. Nelson and Winter's work suggests that the structures supporting innovation vary greatly from sector to sector, and research on differentiated knowledge bases (Asheim and Gertler 2005, Asheim et al. 2007, Gertler 2008) suggests there are different 'types' of knowledge, and their characteristics impact the ease with which they can be shared between people and across spaces. *Analytical* knowledge, which is critical to many natural sciences, is primarily codified in nature. Its meaning is relatively easy to write down and is considered 'universal', and understood in a similar way across different places. Sharing this strongly codified and abstract knowledge is therefore hypothesized to be relatively easy and not hindered much by cultural differences or geographic separation. *Symbolic* knowledge on the other hand, has strong tacit and semiotic content and is difficult to communicate consistently outside its social and geographic context when references to culture and local specificities are

missing. Symbolic knowledge is consumed through an act of interpretation, and its meaning varies depending on local understandings (Fish 1980). Sharing this type of knowledge could be problematic without face-to-face interaction and without a common cultural frame of reference (Gertler 2008). These knowledge types are extended to differentiated industrial knowledge bases, where the development of pharmaceutical drugs and vaccines is an example of an industry with a predominantly analytical knowledge base, and many cultural industries including musical theatre are examples of industries with predominantly symbolic knowledge bases.

Research on knowledge characteristics, and their associated geographic tendencies, suggests that innovation processes are (spatially) organized quite differently in cultural versus science-based industries. More specifically, the effective communication of symbolic knowledge is said to rely more on geographically, relationally and institutionally proximate relationships (or affinities (Gertler 2008)) than analytical knowledge. This suggests that in order to engage in collective knowledge-creation activities in symbolic knowledge-based industries, the creative team requires proximate partnerships. Research on cultural industries demonstrates the strengths of localized cultural production networks, and the role that these play in economic growth and competitiveness (Scott 2000, Power and Scott 2004, Rantisi 2002). Analytical knowledge-based industries on the other hand, routinely draw on knowledge inputs from nodes of excellence located around the world (Moodysson et al. 2008, Moodysson 2008). Based on this emerging body of work on knowledge typologies and new product development, it is not unreasonable to assume that the *adoption* processes of knowledge-intensive products are also subject to such geographic tendencies.

## **Research questions**

These ideas informed the comparative case study design of this research. I use two cases, one cultural and one science-based, to examine the market as communication network used to transmit two very different types of knowledge. The fundamental aim of this research is to investigate the impact of industrial knowledge base on the social and geographic distribution of validating intermediaries, but I have arranged the case studies around three main questions:

- 1) Who are the primary participants in the market development process?
- 2) What are the institutional practices that shape and constrain their behaviour?
- 3) What is the spatial configuration of this stage of the value chain: where are these intermediaries, are they dispersed in each local marketplace or centralized in a few global nodes of excellence?

This process-focus is in close alignment with a systems approach to innovation (Edquist 2005), which places an emphasis on organizations (the formal structures, or players) and institutions (the practices that regulate relations and interactions between organizations, or rules of the game (Gertler 2010)) that influence the development, diffusion and use of innovations. The following pages seek to speak to this body of literature by demonstrating that the acceptance and adoption of innovations is not straightforward, and prone to challenges. Furthermore, a more detailed look at this function of innovation systems helps to further our understanding of the social and spatial foundations of innovation. After an overview of the research design in the next section, I use two cases – the launch of a new theatrical production and the introduction of a new vaccine – to identify the intermediaries that are involved in the market development process, and the

institutions that shape their practices. These cases suggest that innovations are not simply transferred to the marketplace, but must first be communicated across intermediaries that are embedded in several distinct communities, thereby accruing important validating support. This process of 'market development' is evident in both case studies. However, the social and spatial organization of this process is different for different knowledge types. The concluding discussion illustrates that the geography of knowledge flows associated with the introduction of innovations is shaped by the nature of uncertainty and the consumer's perception of expertise.

## **Research design**

These two cases – the launch of new theatrical productions and the introduction of new vaccines – are particularly instructive for the purposes of this research. Both products are knowledge intensive and must overcome significant uncertainty before they are adopted. The disruptive nature of novelty potentially impedes adoption in a marketplace with strong and established norms concerning 'value'. Furthermore, producers in both cases aim for widespread appeal (as opposed to niche markets) and extensive diffusion, as they share a number of economic characteristics including an expensive, lengthy and risky development process. The major variable on which they differ however, is the type of knowledge that is critical in their development of new products, where one relies on symbolic knowledge, the other on analytical.

Live theatre is a cultural industry with a predominantly symbolic knowledge base. The themes, stories and characters of theatrical works often reflect or comment on the culture of the time and place in which they originated. Musical theatre is an appropriate case for the purposes of this study because market development is vitally important to the economic success of theatrical

productions for two main reasons. First, the development of new theatrical works, especially in musical theatre, is extremely expensive and risky. For example, *The Sound of Music*, which opened in Toronto in 2008, required a C\$12 million investment with running costs estimated at C\$800,000 per week. These productions require large up-front investments, without guarantees that ticket sales will generate enough revenues to break even. Second, theatregoers also face risks, in terms of product satisfaction. Theatre is an experience-based good, and consumption will always be a risk as the quality of the good is never completely known prior to purchase (Throsby 1994, Colbert 2003). Tickets, especially for musical theatre, tend to be expensive when compared to other entertainment options, which prompt the consumer to search for third-party validation of product quality. In other words, producers rely on intermediaries to create awareness and excitement about a new production, and theatre-goers rely on intermediaries to give them some indication of the quality and value of this experience. Finally, in contrast to other cultural products such as film, musical theatre productions ‘diffuse’ to other marketplaces relatively slowly due to the cost associated with staging another production. The reception in one marketplace can therefore significantly impact the likelihood of adoption in another marketplace. The slow diffusion process is an asset for the purposes of the research presented in this paper, because this makes the spatiality of the market development process more visible.

Vaccines are a pharmaceutical product with a predominantly analytical knowledge base. The science that informs the development of new vaccines is generated in global research networks, and its meaning does not vary from place to place. Furthermore, clinical trials take place in locations around the world to ensure its safety and efficacy in a wide range of patient populations. The case of vaccines is particularly instructive in comparison with musical theatre

for two reasons. The development process of vaccines is also very expensive, lengthy, and does not guarantee to result in a safe and effective preventative treatment option that gets approved for sale and adopted in vaccination programs. Research and development in the pharmaceutical industry requires large up-front investments: more than one third of pharmaceutical R&D spending is pre-phase II (the level just before final human trials), where the probability of a drug making it to market is under 10% (Baum 2010). Moreover, seventy percent of industry trials fail at the phase II stage (Singer-Vine 2008). Pharmaceutical companies spend large sums of money on pharmaceutical advertising and other marketing activities in order to capture enough market share to recoup investment before the patent expires. Secondly, consumers also face uncertainty in their decision to get vaccinated or not. Recent examples of the vaccines that protect against some strains of the human papillomavirus (HPV) and the H1N1-influenza illustrate that many people remain skeptical about getting themselves or their children vaccinated, despite market approval from medical communities and governments. Furthermore, the preventative nature of vaccines makes concerns about potential long term side effects, but also around social acceptability, more prominent than they would be around pharmaceutical drugs that treat urgent medical problems. Finally, the lengthy and formal process of approving vaccines for sale and adopting them into public health vaccination programs makes this market development process also highly visible. This has been especially apparent in recent years, as illustrated by heated debates around the HPV vaccination programs in a number of different countries (Hammoud 2008).

One of the strengths of theory building from case study research is that creative insight often arises from the juxtaposition of contradictory or paradoxical evidence (Eisenhardt 1989). Knorr-

Cetina (1999) embraces this juxtaposition in her study of molecular biology and high energy physics, by selecting cases that are ‘polar types’ in which “features of one case are brought into focus through the difference from the other” (Knorr-Cetina 1999), and “the process of interest is ‘transparently observable’” (Eisenhardt 1989, 537). By systematically comparing the physical, financial and social requirements for knowledge creation, Knorr-Cetina uses the case studies to inform a generalized argument, rather than particularistic descriptions. The case studies of musical theatre and vaccines also fill theoretical categories.

They are particularly appropriate for the subject of this research because their market development process is distinct from product development. Although consumers play an important role in the testing process in both cases, products are not customized according to individual user requirements and users do not have direct input to the development process. In other words, individual consumers are not drivers of innovation. This is quite different from cases of user-led innovation (as in, for example Lundvall 1985, 1988; von Hippel 1988, Grabher et al. 2008), where individual users are intimately involved in the development of new products from an early stage. A consumer can reduce the risk associated with the purchase of an expensive piece of complex machinery, for example, by being a partner in the innovation process. In this situation, the processes of product development and adoption tend to overlap. This is not the case in theatre and vaccines, where the ‘marketing chain’ between producer and consumer involves a number of intermediaries (as illustrated in figure 1). Product development and market development are distinctly different activities in these cases, and therefore more easily observable.

The major variable on which these cases differ however, is the type of knowledge that is critical in the development of new products, where one relies of symbolic knowledge, the other on analytical. The literature on differentiated knowledge bases suggests that effective transfer of these different knowledge types is associated with very different social and spatial requirements. In this research I systematically compare musical theatre and vaccines in order to describe the social and spatial organization of the market development process, and how this varies for different types of knowledge intensive products.

## **Methodology**

The methodology employed in this research is multifaceted and includes semi-structured interviews as well as participation in a wide range of events, seminars and workshops to collect information about these industries. Forty-one in-depth semi-structured interviews with key informants in the fields of musical theatre (28) and vaccines and public health (13) form the primary basis of empirical work in this research. These interviews lasted an average of 50 minutes and as long as two hours, and were conducted between June 2007 and November 2009 with leaders in industry (8), government (7), and other intermediaries (26) such as industry organizations, members of the media and research institutes. In the theatre case study these key informants include theatre producers of successful and award winning shows; industry associations; directors of entertainment marketing companies or in-house marketing departments; public relations agents; municipal government officials; and theatre reporters and critics. In the vaccine case study, informants include representatives of pharmaceutical companies; firms consulting for the pharmaceutical industry; government officials at the national, provincial and municipal level; directors of medical associations; and health and

science reporters. In order to identify and engage in fruitful conversation with these key informants, it was also important to gain a solid understanding of the main issues, objectives and challenges that these communities face when introducing new products. To this end, I attended a broad range of workshops, lectures and public events in both communities. These venues and the informal interactions with these communities were instrumental in identifying key actors, and in providing a solid understanding of their practices and vocabularies.

### **Toronto: A beta-city**

This research compares the process of market development in musical theatre and vaccines, and examines the spatial distribution of validating intermediaries – more specifically whether these are found in local marketplaces or global nodes of excellence. The bulk of this research was conducted in Toronto, Canada, with additional interviews for the theatre case study in New York City and London. Toronto is the largest city in Canada with a population of 2.48 million people (5.5 million in the Greater Toronto Area) and it has a diversified economy with strengths in sectors such as biotechnology, finance, information technology, screen-based arts and design. Despite its aspirations however, Toronto lacks the size, scope and ‘world city-ness’ of an ‘alpha’ city such as New York (Beaverstock 1999). Toronto’s ‘beta-city’ status is significant for this research, as it becomes possible to separate intermediaries in the local marketplace from intermediaries in global nodes of excellence. Economic actors in Toronto look to other jurisdictions (or ‘global nodes of excellence’) for standards in some situations (the “percent for public art” model for example (City of Toronto 2007)), but not in others (the US Centers for Disease Control advise on school closings during the second wave of H1N1 influenza in the Fall of 2009 for example (The Globe and Mail 2009)).

In order to maintain comparability, and contribute to the understanding of underlying processes rather than case particulars, I have organized the findings around two questions: 1) who are the primary participants in the market development process? and 2) what channels are used to assess and communicate the value of innovations? I will discuss the two cases in turn, tracing the intermediaries from those most closely associated with the production unit, to those closest to the end user. These include the ‘propagators’ of the innovation that create the opportunity for adoption by making the innovation available, and marketing partners that provide promotional information to induce adoption (akin to Brown’s (1975, 1981) focus on agency establishment and innovation establishment). In addition to these actors however, consumers rely on sources that help them to assess the perceived value of these inherently uncertain knowledge-intensive products. Validating experts, industry organizations and peers are therefore important actors in the market development process. Following these overviews, the similarities and differences between the two cases allow for a more general discussion about the role of intermediaries in the adoption process and their geography.

## **Findings – Musical theatre**

### **Producers**

A theatre producer’s main objective is to make people feel comfortable purchasing a ticket to something that is happening live and where there is no money-back guarantee. Especially when large, capital intensive shows try to build advance sales before they open, producers want people to buy a ticket to something that is not yet complete. “Most people don’t feel comfortable until they know enough about the product or event” (Informant K, producer), “people want

information...it's a lot of money and people want to know, 'what is this thing?'" (Informant E, marketing). On a fundamental level, this means that originality and novelty must be balanced with familiarity in order to mitigate risk. The more familiar a product is, the easier it will be to find an audience. This can come in a familiar story or title (such as 'The Sound of Music'), a creative team's reputation (such as Andrew Lloyd Webber), or a star (such as Catherine Zeta-Jones or Topol), "so that audiences at least have something to go on" (Informant K, producer). The process of selecting shows is therefore inherently shaped by the producer's attempt to reduce the financial risk associated with development and staging. Although original works draw a lot of attention and value from their novelty and freshness, these qualities need to be balanced with some form of familiarity in order to cope with the risk profile of musical theatre.

### **Marketing partners**

When the show is less familiar, which is the case for most 'original' and 'creative' works, the marketing campaign is crucial in the process of raising product awareness. "It may not be a household name, so we need to invest in education and marketing material, which also includes samples, to give a 'taste' of the show" (Informant B, producer). "[Potential theatregoers] want video, song downloads, cast photos, they want things that cut their risk. All branding is risk aversion" (Informant E, marketing). These materials are carefully designed by the production company and a marketing partner, which may or may not be in-house. Sampling is difficult in the case of experience-based goods such as theatre. Unlike a car, which you can test drive, or food, which you can taste, a piece of theatre is not easy to observe or try before purchase. The transition towards on-line media allows for video clips and images, but this is only a distant proxy for the actual (and social) theatre-going experience. The design of the sample is therefore

something that is ‘emotional’: “Our job is to create momentum and a kind of personality around the show so you have a feeling of what it is...it’s not so much what’s going to happen, but we’re selling much more ‘how it will feel to go’” (Informant E, marketing). This ‘personality’ is also designed with the intention of working in different marketplaces. When a show such as ‘Priscilla, Queen of the Desert’ transfers from Australia to London’s West End, and then transfers to New York’s Broadway via a North American try-out in Toronto, producers find it desirable to have marketing materials be consistent.

In contrast to these global considerations around the design of marketing materials, the execution or roll-out of advertising is shaped in large part by local context, such as the organization and cost structure of different media and cultural habits and norms. This step of the value chain therefore requires an intimate knowledge of the marketplace: “How many ads to run, where to run them, when, what language you should use...” (Informant K, producer). To industry insiders, a television commercial in London may suggest the show is a flop, but this medium does not have the same association in New York. When touring productions of Broadway shows open in cities around the continent, the marketing materials are often provided by the production company, but “where and when it gets placed will be controlled by a local presenter...mainly because the perception is ‘you can’t know it from New York’ (Informant E, marketing).

## **Media**

The production’s marketing campaign is an important channel through which ticket-buyers access information about the show. However, although these images and video clips give a sense of ‘what’ the show is, they do not necessarily convince someone of whether it is ‘good’ or

‘worth’ seeing. Newspaper coverage on the other hand, is a source of less biased third-party information. Production companies therefore try to control who gets interviewed, what gets published, on which page of the newspaper and which day of the week. A publicist (or press agent or public relations department) is the intermediary between the production company and the media, who will “try to create awareness for the show, try to get feature articles on the production, on the actors” (Informant L, media). The relationship between the production company and the media is carefully negotiated: “Everyone usually wants [to interview] the star of the show. So I said, ‘if you give me the star before anyone else, I will make it the front section of our Saturday entertainment section’, which is our top prize because it is read by 800,000 people, a big deal. You have something to give in return” (Informant S, media). Similarly, the production company can limit the flow of information by turning down interview requests by reporters they feel will not serve the show favourably, based on past encounters or reputation. Publicists therefore perform a strong gate-keeping role.

Arts reporters and reviewers aim to make readers aware and intelligent about theatre in their city: “I am working to create a synergy, between theatre going people and the theatre...educating, being a matchmaker” (Informant S, media). In order to educate and socialize theatre-going audiences, arts reporters typically write a range of articles, including interviews, commentaries and critical reviews. The review, and the star rating that sometimes accompanies the review, is one of the most important sources of information for potential ticket-buyers, and can be a significant contributing factor to the production’s (financial) success.

The review is a written account of what the production was like, and informs readers about what is currently on stage: “people reading the review care ‘is this a good or a bad show and should I go and see it’” (Informant S, media). Reviews come out at the beginning of the show’s run, but only after opening night. This gives the production a chance to settle in and, in the case of new permanent productions, to adjust the show based on audience response during a preview period. Although the review is eagerly awaited by the performers and creative team, the primary audience for the review is the theatre-going public. The weight of this ‘endorsement’ is based on the personality and reputation of the critic (such as Richard Ouzounian in Toronto and Ben Brantley in New York), but also on the nature of the newspaper. Despite the availability of information on the internet, the prestige of a newspaper such as the New York Times provides source credibility that is important in shaping the value of this endorsement.

A theatre critic’s ‘horizon of expectation’ (Jauss 1982) and internalized standard of quality are derived from extensive experience as well as education. This experience results in (perceived) expertise which allows the critic to de-code the symbolic meaning and value of new theatrical productions. The review (and, if available, the star-rating) is an attempt to codify these tacit understandings. The critic as an informed and authorized reader or trained commentator is therefore a source of information for potential ticket buyers on the perceived quality of the show. Readers come to trust a reviewer’s assessment of shows through reading them regularly. For these reasons, a positive review is an important source of product validation, and reduces uncertainty in the mind of the consumer.

## **Industry organizations**

Whereas a review comes from one person with a particular perspective, point of view or taste, awards given by industry-wide organizations such as the Toronto Alliance for the Performing Arts or the Broadway League, are based on a jury of peers. These peers are professionals in the industry and their expertise is rooted in years of working experience in the theatre. Their ‘horizon of expectation’ is therefore based on a very different kind of experience than that of the theatre critic. Whereas the theatre critic represents the interests of the consuming public, these industry professionals represent the expert insiders, evaluating the show from a creative and production-side perspective. While reviews come out at the beginning of each production, awards are given once a season. Jurors evaluate productions within the context of one season, and do their best to see the show as late in the run (and as polished) as possible (Informant T, industry association). Performing arts awards are given out by industry organizations in many cities, as live theatre is by definition performed and consumed on a very local basis. An award, nomination or best-of-the-fest title gives “a sign of approval” and third-party validation: “the awards were a marketing tool, that had a big selling power” (Informant B, marketing). The recognition of excellence also adds significant visibility and credibility to future productions by this production company.

The market for cultural goods is very uneven (Grant and Wood 2004), and in the case of musical theatre it is also hierarchical with New York’s Broadway firmly situated at the top as a global node of excellence. The most prestigious and well-known awards for commercial theatre in North America are therefore the Broadway League’s Tony awards for Broadway productions in New York City. This televised awards show features performances from nominated productions

and is seen by approximately seven million viewers across the continent, making the event itself an important marketing venue. The Tony awards, unlike most local performing arts awards, have wide geographic reach: “For a touring show, it definitely helps if you can say ‘the Tony winning X’” (Informant C, industry association). This is a reflection of the history, scale and prestige associated with Broadway theatre, and the city’s concentration of sophisticated audiences and media. Toronto, on the other hand, has a much more diverse theatre scene and smaller audience base, and the use of performing arts awards as a marketing tool is limited. The Dora awards ceremony, which celebrates the best of Toronto performing arts, is presently an industry event that is important for networking.

## **Peers**

The League of American Theatres and Producers administers a survey of Broadway audiences and the factors that influence their theatre-going behaviour. For the 2006-2007 season, they administered surveys at 23 different productions at 72 individual performance times for a total of 5109 respondents. When asked what prompted theatergoers to attend a show on Broadway, 46% of respondents cited ‘word-of-mouth’. (The League of American Theatres and Producers 2007). It is a powerful endorsement when a peer spent the money and time to see a show, and subsequently recommends it. The word-of-mouth or ‘buzz’ is critically important, especially early in a show’s run. Production companies try to create buzz by appealing to early adopters and opinion leaders: “those early adopters are theatrically inclined...I want those early adopters” (Informant B, producer). These adopters, which include subscription audiences, are experienced theatre-goers and have perceived expertise akin to Porter’s (2000) ‘sophisticated and demanding consumers’. Strategies to reach these audiences include loyalty programs, subscription audience

events, newsletters and facebook groups. Potential ticket-buyers search for this experiential evidence of a new show's quality in their circle of friends, family and acquaintances, but also in on-line communities and blogs with audience comments. While on-line forums of such buzz are global in reach (Jones et al. 2010), more personal word-of-mouth discoveries take place on a highly localized scale at theatres and ticket-outlets. In London and New York long lines at discount ticket-booths become venues for acquiring this peer-experience-based information, a so-called urban-fellowship: "People get on that line, waiting to see what's up at the front, hoping to gather knowledge from people around them on the line as to what show they're going to see" (Informant E, marketing). In order to feed into these conversations, production companies discreetly invite hotel concierges and taxi drivers to the show gratis, and in larger markets such as New York and London they employ street teams of promotion workers to act as diffusing agents.

These findings illustrate the range of intermediaries involved in marketing and validating new theatre productions. The production company is not only engaged in marketing and promotion activities, but also maintains close ties to members of the media, industry organizations and user-groups. Through their negotiations for media coverage and their involvement in the organization of award shows and festivals, theatre producers actively engage in market development. The structure of the market development process, the primary participants and their basis for evaluation are summarized in figure 2.

*Figure 2 – The market development process for musical theatre*

Primary participants	Output	Basis for evaluation	Activity in market development process	spatial configuration
producer / presenter	product availability	reduce financial risk by relying on familiarity: story, star or show?	market access	Local marketplace
marketing / press relations	marketing campaign	match marketing campaign to local audience	product awareness	Global design, Local execution
translators: journalists and critics	critical review, star rating on opening night	individual critic's internal quality standard, based on expertise and experience	validation by expert	Global node of excellence and Local marketplace
industry organizations	award nominations or wins at the end of the season	professionals in the industry assess productions within the context of 1 season	validation by industry	Global node of excellence
peers and diffusion agents	ticket sales volume, buzz, word-of-mouth, recommendations	experience-based	validation by peers	Global node of excellence and Local marketplace

## Findings – Vaccines

### The pharmaceutical company and regulators

The pharmaceutical sector is somewhat of a poster-child for science-based industries, characterized by geographically dispersed centres of excellence for research and development, organized as nodes in global networks of knowledge production (Moodysson et al. 2008). In order to gain market access however, local actors play a critical role. Health Canada is the regulatory body that must approve new products for sale in Canada, and it sets the pre-conditions for product availability. A pharmaceutical company that wants to sell their product in Canada must file a 'new drug submission', which contains evidence of the vaccine's safety and effectiveness based on animal studies, chemical analyses, preclinical and clinical studies (Informant B, public health). The company submits this evidence to every jurisdiction in which it wants to sell the vaccine. If, at the completion of a thorough scientific review, Health Canada

concludes that the benefits outweigh the risks, and that the risks can be mitigated, the vaccine is approved for sale. “The process of approval is scientific” (Informant B, media).

### **Marketing and sales representatives**

In Canada, pharmaceutical advertising to the general public is regulated by Health Canada and reviewed by the Pharmaceutical Advertising Advisory Board (PAAB) to ensure that health care product communication is accurate, balanced and evidence-based – or, “trustworthy” (Informant Q, marketing). Promotion of a drug prior to market authorization is not permitted, and after authorization the promotion of a prescription drug or vaccine is not allowed to be advertised to the general public for treatment. In Canada however, the bulk of pharmaceutical advertising targets health care practitioners and aims to increase their product awareness. All materials developed by the manufacturer’s marketing department must also be cleared by PAAB before they are printed in a publication such as the Medical Post, or shown to the physician in person by a pharmaceutical sales representative. “All information must be evidence-based, reflect current best practice and images should not be insinuating any information that is not backed by sufficient and appropriate evidence...Appropriate – that would be scientific results from double blind trials of sufficient size, that are significant trends and not tendencies, and so forth” (Informant O, producer). The controls that are placed on knowledge circulation by regulators try to ensure that this information is not false, misleading or deceptive. The nature and quantity of evidence that is perceived appropriate for communication in the marketplace is carefully regulated, with the intent to protect the health of Canadians.

The most direct means of promoting new drugs and vaccines to physicians is through pharmaceutical sales representatives. They are employed by the pharmaceutical company and speak with physicians about their products. These meetings range from a thirty second 'drop in' to an hour-long 'lunch-and-learn'. The sales representative adapts the content of the meeting to the physician's prescribing habits as well as the performance of this product relative to alternative therapies. The more novel and unfamiliar a product is in its class, the more education the sales representative needs to provide (Informant T, producer).

The materials a sales rep has at his or her disposal are limited to what is approved by the advertising advisory board, and include the product monograph, clinical trial results and academic publications, prescription rates, and guidelines published by medical associations. The product monograph lists the ingredients, storage conditions, efficacy and safety restrictions which are consistent across jurisdictions where the drug is approved for sale. Clinical trial results and re-prints of scholarly articles that report on clinical trials research are also 'global' in nature as they are published in international research journals. However, if parts of the trial were done inside Canada, this evidence is considered more convincing by the physician, as it suggests the product was tested on a patient population that is more similar to his or her own patients: "the closer, the better" (Informant O, producer). "Credentials are important: where the research was done and by who, where the testing was done. An Indian population is different from North American, even though you can do the study in India for a fraction of the price" (Informant B, producer). Data on vaccination rates also tend to be most persuasive if they reflect local trends, a similar patient population, and the habits of a physician's most immediate peer group. For new products, which have not yet been prescribed or administered in this jurisdiction, data from

elsewhere is sometimes appropriate if the patient population is considered similar: “If a product has been approved in the US for several years, the number of prescriptions filled in the US safely over X years can be powerful information when entering the Canadian market” (Informant O, producer). Guidelines, recommendations and treatment options published by medical associations are adapted to local regulations and habits.

Ultimately, the sales representative tries to convince the individual physician of the safety, efficacy and value of the vaccine: “Pharmaceutical representatives appeal to the scientific side of a doctor. They have all the clinical data from around the world, phase III studies, but until doctors know it is going to work on their cohort of patients, they are not believers” (Informant B, producer).

### **Media and medical organizations**

Science journalists report on findings and debates that emerge in scientific communities. Much like other actors engaged in communicating science such as teachers and employees at science museums, their objective is to explain and to be accurate. Science journalists however, are particularly concerned with what is ‘new’ and ‘significant’ to their audience (Informant Q, media). Their role is similar to that of the performing arts reporter, in that they work in the interest of the reader (not the scientist), and their goal is to inform the public and promote scientific literacy. However, unlike the theatre critic, the role of a health reporter is not to evaluate the quality of the science or technology itself, but rather to communicate the significance or implications of science such as new medical breakthroughs: “as a health journalist, I have an important role in the dissemination of health information” (Informant B,

media). In their writing, science journalists are not simply passing on press releases from universities and companies, but they “use the generative aspects of language to add value, to make connections...why is this interesting?” (Informant Q, media).

Both kinds of reporters (arts and science) work in the interest of their readers, and are experts that consumers turn to for information on new products. However, they perform slightly different ‘translation’ functions. Whereas the theatre critic ‘codifies’ the symbolic value of a new production, the health reporter ‘translates’ medical topics into relevant information by situating this within a local context. The general population has difficulty accessing, understanding and absorbing information contained in scientific publications. “Journalists ask the questions that the public would want to know the answers to” (Informant Q, media). A health journalist should have the skills to interpret, examine and report on the subject matter, so as to make it accessible and significant to their readers.

Although the hallmarks of science reporting include clarity and accuracy, the competitive landscape of news media leads to “sensationalized headlines” (Informant Q, media) in order to attract audiences. Readers of outlets such as *Time* and *Maclean’s* magazine are not actively seeking out science news (unlike readers of *Scientific American*, *Popular Science* or *Nature*) and science competes with all other news for space (Informant Q, media). However, the coverage of scientific studies and debates in precisely these outlets has a big impact on public awareness and opinion, as is illustrated by the *Maclean’s* magazine article titled “Our girls are not guinea pigs: Is an upcoming mass inoculation of a generation unnecessary and potentially dangerous?” (Gulli 2007). Similarly, widespread media reports on a single (and later discredited and retracted) study

published in the *Lancet* that links the measles, mumps and rubella (MMR) vaccine to autism have had a huge impact on UK vaccination rates.

Medical associations and professional bodies of physicians, such as the Society of Obstetricians and Gynaecologists of Canada (SOGC) and the Canadian Women's Health Network (CWHN), play a similar role by synthesizing information. These organizations are instrumental in bringing together and assessing emerging evidence on treatment options for their particular therapeutic areas. Their evidence-based guidelines do not intend to prescribe an exclusive course of action, but are recommended as up-to-date best practices. These guidelines are also used by pharmaceutical sales representative in their meetings with physicians.

In the recent case of the HPV vaccine, medical associations and public health departments published position statements in which they endorsed or criticized this newly approved vaccine. These organizations do not always agree on the quantity and nature of evidence that is sufficient to support and adopt emerging treatment options. Although the SOGC publicly endorsed the vaccine and described the province-wide immunization program as one of the most important health care initiatives of this century, the CWHN cautioned against the speed and scale of the vaccination programs. A prominent scientist affiliated with this network was quoted in the above-mentioned *Maclean's* magazine article. These conflicting expert-opinions created confusion and hesitation amongst adopters, and Toronto Public Health concluded that "media controversy without the benefit of a provincial education campaign" contributed to the low uptake (53%) of the provincial vaccination program in the Fall of 2007 (Informant J, public health).

## **Peers**

Patients search for information through interpersonal channels of communication, which include patient support groups and online communities. They also turn to their physician for advice.

However, in Canada much of the market development process is directed at the physician, who in turn recommends and administers the vaccine to the patient. Physicians rely heavily on personal experiences and their peers' to inform their decision to administer or recommend a new vaccine. An example of a forum that promotes such inter-personal flows of information is Continuing Medical Education (CME), which physicians, as part of the Royal College of Physicians and Surgeons of Canada, need to attend in order to keep their membership (Informant O, producer). CME lectures that are accredited by an academic institution are reviewed by the Royal College as non-biased and a fair discussion of all treatment options. Pharmaceutical companies and the Royal College consider this an important communication channel to keep physicians up-to-date with advances in medicine.

These events often feature speakers that are considered key opinion leaders (KOL). These are specialists in that particular therapeutic area, and are highly regarded by the community. "We have key opinion leaders speak at these types of forums to present all the clinical data, the efficacy, safety and national recommendations, so that physicians can hear it from one of their peers or colleagues, someone they look to for referrals" (Informant T, producer). These opinion leaders play a key role in the dissemination of information, and building consensus: "You must target the influencers, key doctors who are respected within their community. Within their specialty they are well-known, there is a small cohort of positions in hospitals, chiefs etc. who

are decision makers” (Informant B, producer). The words from such respected and trusted peers inform a physician’s decision to recommend new vaccinations to their patients.

These findings illustrate the range of intermediaries that are involved in preparing the market for new vaccines. The pharmaceutical company employs sales representatives to speak to physicians, but they are also involved in the organization of forums such as CME. Through their interaction with many of these intermediaries, manufacturing companies actively shape the communication channels and messages that circulate within a marketplace from behind the scenes. The structure of the market development process, the primary participants and their basis for evaluation are summarized in figure 3.

*Figure 3 – The market development process for vaccines*

<b>Primary participants</b>	<b>Output</b>	<b>Basis for evaluation</b>	<b>Activity in market development process</b>	<b>spatial configuration</b>
pharmaceutical company, regulators; public health	approval for sale funding for vaccination program	safety and efficacy; cost-effectiveness	market access	Local marketplace (national, provincial and municipal)
advertising regulator, pharmaceutical company sales representatives	marketing campaign	is information evidence-based?	product awareness	Global design, Local execution
translators: health journalists, media	media coverage	journalist's ability to access and comprehend scientific literature	validation by expert	Local marketplace (national)
medical associations	position statements, evidence-based guidelines	safety, efficacy,	validation by industry	Local marketplace (national and provincial)
CMEs, KOLs, peers	vaccination rates, recommendations	expertise of medical specialists with same patient population and context	validation by peers	Local marketplace

## Discussion

### The role of intermediaries in market development

The findings presented above suggest that in order to be successful at bringing novel-knowledge intensive products to market, producers not only focus on product innovation, but also try to shape market development. “The quality of the product must be excellent, but the ‘package’ must capture demand” (Informant B, theatre producer). When products are new and unfamiliar, it is especially important for producers to focus on increasing product awareness and they rely on various forms of endorsement and sources of credible validation in order to offset the inherent uncertainty. In both of the cases presented above, musical theatre and vaccines, intermediaries play important roles in this process of market development.

Gaining access to the Toronto market involves predominantly local actors. Theatre producers or presenters, or regulatory agencies that approve the vaccine for sale in Canada, are local actors that set the pre-conditions of product availability. In both cases, the decision to launch a new product involves an assessment of risk and uncertainty: is this theatre production original but familiar enough, and is this vaccine effective and safe enough? Once market access is assured, four distinct strategies of market development seek to overcome the risk and uncertainty that is associated with novel products.

### *Product awareness*

Producers in both of these cases aim to develop products that have the potential to diffuse widely, as sales volumes ultimately determine the return on their investment. To this end, marketing partners tend to *design* campaign materials for a global market. However, they need to

match the on-the-ground *execution* of this campaign to local advertising rules and social norms. While design activities can be concentrated in the global network to take advantage of scale economies and brand consistency, the execution activities such as channel selection, sales promotion and market research tends to be dispersed in order to be responsive to local context (Takeuchi and Porter 1986, Dicken 1994).

*Validation by experts, industry organizations and peers*

Marketing campaigns raise product awareness, but consumers turn to less biased third-parties for information on whether a new show or vaccine is ‘worthwhile’ and ‘valuable’. These validating intermediaries include members of the media, industry associations and peers.

In both case studies, members of the media have a brokerage or bridging position between the production company and the wider community, but work in the interest of the public. The behaviour of both reporters is shaped and constrained by institutional practices of their profession. They are bound by journalism ethics and standards and are only allowed to report on a new show or scientific finding after opening night or after the publication embargo is lifted. The nature of their bridging position and expertise however, is different for different types of knowledge. In the case of musical theatre, expertise appears rooted in experience with the *product*, whereas in the case of vaccines this is rooted more in experience with the *context* in which products get adopted. Science and health reporters communicate and translate information related to medical topics from expert communities and policy circles to the general public. The reporter’s ability to comprehend, absorb and then frame scientific findings into a *local context of significance* makes them a valuable resource to potential users.

The expertise of theatre critics on the other hand, is rooted in theatre-going experience. In the review, and the star rating that sometimes accompanies it, a critic ‘codifies’ symbolic and tacit-based understandings. Their respected opinion helps the potential ticket-buyer decide whether the show is worth investments of their time and money. The critic’s expertise and reputation – and consequently the impact their reviews have on the show’s likelihood of success in the marketplace – is based on their level of experience. In this situation, New York City has a theatre industry that is greater in size, history and prestige than any other marketplace in North America, and their critics, as well as industry organizations and audiences, are perceived to have a greater and more sophisticated level of theatre-going experience. The opinions and recommendations of intermediaries in this *global node of excellence* are therefore important sources of validation when a version of this production is staged in other marketplaces, such as Toronto.

A similar spatial pattern can be identified in the case of validating industry organizations and peer groups. Endorsement for new vaccines comes in the form of position statements by local, provincial and national health agencies, whereas third-party validation for a theatrical production is provided by a Tony award from Broadway. The different spatial configuration of intermediaries in these two case studies suggests that sources of validation are based on different perceptions of expertise. For pharmaceutical drugs, this expertise is rooted in local context: “what we are prepared to see as a solution and what we are prepared to see as a problem or side effect has to do with location” (Informant N, health association). This context includes assessments of the cost-effectiveness of this preventative measure relative to existing screening and treatment options, and the social acceptability surrounding a new vaccine such as Gardasil. The existing health care infrastructure that screens women for cervical cancer and educates girls

about sexuality are an illustration of the local context within which ‘solutions’ (such as the HPV vaccine) are received. In theatre on the other hand, the (perceived) expertise that is required to recognize and validate value is rooted in experience with the product: “who decides what’s good and who decides what’s important is where the economic value is going to be generated” (Informant F, government). Intermediaries are valued for their expertise in recognizing whether a new theatre production is ‘effective’ in creating the desired emotional response, as well as ‘worthwhile’ compared to alternatives. Scenes such as New York’s Broadway have become ‘exemplar’ sites worthy of being imitated, and these intermediaries have geographic reach beyond their own marketplace. A summary of the role of intermediaries in the market development process for theatre and vaccines is presented in figure 4.

*Figure 4: The role of intermediaries in market development for musical theatre and vaccines*

Type of activity	Intermediary	Case	Role / Institutional practice	Location of critical actors
Market access	production company and regulators	Theatre	assess the balance of familiarity / novelty	Local Marketplace
		Vaccine	assess the safety, efficacy and cost-effectiveness	Local Marketplace
Product awareness	marketing partners	Theatre	ensure global idea is matched to local context and culture	Global node and Local Marketplace
		Vaccine	ensure evidence-based information, scientific results	Global node and Local Marketplace
Validation by expert	translators	Theatre	codify the symbolic value based on experience and expertise	Global node of Excellence
		Vaccine	situate the scientific value based on experience and comprehension	Local Marketplace
Validation by industry	industry associations	Theatre	award excellence based on industry experience, relative to alternatives	Global node of Excellence
		Vaccine	endorse treatment option based on expertise in therapeutic area	Local Marketplace
Validation by peers	diffusion agents	Theatre	spread the word based on theatre-going experience	Global node of Excellence
		Vaccine	endorse based on medical expertise and same patient population	Local Marketplace

### **Sources of validation, knowledge bases and geographic tendencies**

The market for symbolic-based products such as theatre is not only uneven across space (Grant and Wood 2004), but also hierarchical. The spotlight that is associated with scenes such as New York City's Broadway makes successes (and failures) highly visible. Success on Broadway, (as defined by ticket sales, positive reviews in prestigious newspapers such as the New York Times, and awards) is used in other markets to create product awareness and to provide credible third party validation. Analytical knowledge-based products such as drugs and vaccines, on the other hand must be introduced to each market separately and comply with national health regulations. Unlike in the case of theatre, intermediaries in health care are remarkably resistant to following the examples set by other jurisdictions. This myopia is illustrated by the lack of coordination between adjacent local public health units with respect to HPV public information campaigns (Informant J, public health). Other recent examples within Canada include the provincial variation in strategies around the H1N1 influenza, as well as the geographically uneven adoption of the HPV vaccination program. In this case, raising product awareness and preparing markets for adoption are processes in which sources of validation are predominantly local.

What do these case studies suggest about the effect of knowledge characteristics on the social and spatial organization of the market development process? When dealing with knowledge that is primarily analytical in nature, as in science-based products such as vaccines, actors in any location draw their own conclusions about safety, efficacy, cost-effectiveness and value.

Comprehension and evaluation is based on the ability to access and absorb scientific evidence, the meaning of which is considered universal and does not vary from place to place. There are therefore no sites of 'expertise' where actors' interpretation and evaluation are considered better,

more informed or more valid, than that of actors in other places. The Food and Drug Administration (FDA) regulates access to the largest market (the US), which is why pharmaceutical companies are particularly invested in developing this market early in the patent life of the drug or vaccine. However, FDA approval does not speed up or substitute the approval process in any other jurisdiction. A new drug or vaccine's 'value' is interpreted within the context of the local marketplace, everywhere. This context includes local incidence rates of disease, and the availability and quality of alternative treatment options for example. Validation and endorsements of new vaccines are therefore highly localized processes.

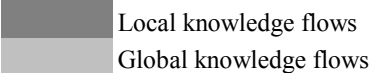
Knowledge that is largely symbolic in nature on the other hand, as in a cultural product such as theatre, is consumed in an act of interpretation. Evaluation of the value of this knowledge depends on one's reference framework and perspective, which varies across space. Theatre critics, industry awards and audiences in New York are perceived to have the experience-base and expertise to evaluate new theatre productions, derived from the long history, scale and visibility of their theatre scene. Intermediaries in these global nodes of excellence are therefore sources of expertise and validation that are used to prepare marketplaces in other cities.

The spatial configuration of these later stages of the value chain, those associated with *market* development, is in stark contrast to the spatial patterns we observe for *product* development (see figure 5). We know that pharmaceutical products such as vaccines are developed based on knowledge generated in research centres around the world. A cultural product such as theatre on the other hand, emerges in reflection to a particular time and place and relies on close proximities between development partners in order to successfully share and generate

knowledge. However, although pharmaceutical products such as vaccines are *developed* in *global* research networks, *local* intermediaries are crucial sources of *validation*. Pharmaceutical sales representatives visit physicians armed with prescription rates, medical guidelines and incidence rates that are specifically adapted to that particular site and jurisdiction. Even clinical trial data is considered more persuasive if it comes from studies conducted locally. In the case of theatre on the other hand, market intermediaries that are critical for the adoption and diffusion of new productions are found in *global* nodes of excellence. Presenters in different cities will often promote the show by making reference to the same awards won in London and New York, and use excerpts from the same reviews in London and New York newspapers.

Figure 5: The spatial configuration of the value chain in cultural and science-based industries

Value Chain: Type of activity	Vaccines	Musical Theatre
Inbound logistics	Local knowledge flows	Local knowledge flows
Production Process	Local knowledge flows	Local knowledge flows
Outbound logistics (or Market access)	Local knowledge flows	Local knowledge flows
Product awareness	Global knowledge flows	Global knowledge flows
Validation by expert	Local knowledge flows	Local knowledge flows
Validation by industry	Local knowledge flows	Local knowledge flows
Validation by peers	Local knowledge flows	Local knowledge flows



Local knowledge flows  
Global knowledge flows

## Conclusion

The finding that local institutions, organizations and practices play an important role in preparing the market for goods derived from analytical knowledge seems to run counter to the expectations arising from the literature on knowledge bases which implies that analytical knowledge ‘travels well’ (Asheim and Gertler 2005, Gertler 2008). However, rather than challenging the assumptions behind this literature, the findings presented in this paper actually have potential to advance and add nuance to these ideas. Local intermediaries play important roles in preparing the market for goods derived from analytical knowledge such as vaccine, not *despite* but *because*

of the ‘universal’ research-based knowledge on which they are based. Clinical trials are conducted on a global scale, and pharmaceutical companies submit these research findings to regulatory bodies in every jurisdiction they wish to sell their product. Officials in each of these local marketplaces must review, interpret and evaluate this research on safety and efficacy, before they are able to approve new products for sale. In the absence of exemplar sites of interpretive expertise worthy of being imitated (such as New York’s Broadway in the case of musical theatre), every marketplace relies on their own intermediaries to establish the value of this research-based knowledge within their context. These findings suggest that although knowledge may travel well, products encounter significant barriers and must gain legitimacy in local marketplaces. This is perhaps most visible in, but probably not particular to, cases where actors are responsible for decisions around safety in their respective jurisdictions, as is the case in health care for example. Future research on other analytical-knowledge-based products or decisions would shine further light on how widespread the implications of these findings are. This limitation notwithstanding, by examining knowledge as an interpretive and communicative *process*, these findings suggest that the geographic tendencies of knowledge flows are not only dependent on the ‘nature’ of knowledge, but are shaped in large part by the organizational structures and institutional practices of knowledge communities.

This research set out to examine the social and geographic distribution of validating intermediaries that participate in the market development process for knowledge-intensive products. The two case studies, musical theatre and vaccines, are similar in their ultimate objective to communicate and introduce ‘novelty’, and must overcome uncertainty during this process. Findings illustrate that market development is an extremely important and highly social

process. Producing firms interact with a range of intermediaries including marketing partners, media, industry organizations and user-groups, in order to raise awareness and validation for products whose value is recognized and established in the marketplace.

Findings from these two case studies suggest that knowledge characteristics have a significant impact on the social and geographic distribution of these validating intermediaries. For products that are based predominantly on knowledge that is analytical and codified in nature, economic actors in any location can draw their own conclusions about value. Local intermediaries, such as medical association and the media, are therefore crucial sources of validation. Interpreting and recognizing the value of products based on symbolic knowledge on the other hand, rely heavily on a framework of cultural references and experience. Some marketplaces emerge as cultural capitals, as they have a perceived cultural expertise and infrastructure that enables them to inform expectations in other markets. Important market intermediaries and sources of validation for new theatrical works for example, are therefore found in global nodes of excellence.

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