

Chapter 3. Patterns of Globalisation in Five Industrial Sectors¹

This chapter provides an overview of globalisation issues in the five industries (*i.e.* automotive, scientific and precision instruments, software, tourism and cinema) analysed for this project and presents elements of comparisons between the globalisation patterns, on the basis of desk work and interviews conducted with major players in each industry. The concept of the GVC, as a set of economic processes, sets the frame and background for a closer observation and explanations of how, in different technological markets and contexts, roles are shared among enterprises, in particular large and small, local and global.

Globalisation issues in five industries

Automotive industry

According to a 2005 estimate by OICA (Organisation Internationale des Constructeurs Automobiles), the automotive industry directly employed more than 5% of the world manufacturing workforce (*i.e.* 8 million people). In addition to these direct employees, OICA estimates there are approximately five times more employed indirectly in related manufacturing and service providers, meaning that a minimum of 50 million additional employees earned their living from this industry.

Automotive production is still concentrated in the most developed regions of the world, as are the relevant markets: 80% of vehicle production and 83% of sales take place in OECD countries, notwithstanding the steady rise of production in non-OECD economies. The trade flows in automotive products (finished and semi-finished vehicles and vehicle components) amounted to almost 10% of all world merchandise trade in 2004, with almost half of the amount being traded among EU member countries.

In 2004 automotive production was close to 64 million vehicles per year (44 million passenger cars and 16 million commercial vehicles, 3 million heavy vehicles and buses)² whereas the production capacities for passenger cars were estimated in the range of 70 million vehicles per year (PricewaterhouseCoopers, 2003). There is an excess production capacity that appears as a consequence of a stagnating overall market and of the prevailing cutthroat competition for market share among Original Equipment Manufacturers (OEM), *i.e.* the ultimate assemblers of finished cars.

Many of the industry's major players have changed, and often so dramatically in the last 10 years, due to international, vertical and horizontal mergers, de-mergers, spin-offs, acquisitions and alliances that have been put in place and terminated, with varying degrees of success, in order to cope with competitive pressure. In 2004, 15 global players accounted for almost 85% of the world automobile production. If only passenger cars were considered, the concentration ratio would be 91% for the same top 15 producers (OICA data). The majority of the top players in the automotive industry are global players: their products and brands are bought and sold across the world and their facilities (production, assembly, R&D and others) are dispersed throughout many locations.

In today's sophisticated markets, cars are branded goods, as buyers and users identify them more or less easily with a corporation. The continuing product differentiation and the consequent multiplication of models within brands is a characteristic of this highly competitive industry (Valenso, 2003). However, the differentiation of products stands in sharp contrast with the consolidation of the top players through strategic alliances and M&A. The quest for synergies and efficiency gains has been driven by the search for the critical size that would guarantee the economies of scale required to support sharp price competition and growing development costs. In the automotive industry, the recombination of activities and firm globalisation has been one and the same process. Auto makers generate, per worker, almost three times higher sales and four times higher net incomes than the auto-parts industry, but need five times more capital. These differences suggest that the two activities differ in three important dimensions: *a*) the share of value added; *b*) the share of payroll in value added; and *c*) the factor mix (volume of labour and capital) used in generating one unit of value added.

Fewer but more powerful external suppliers

In the 1960s, the share in added value of the OEM represented two third of the final product's value, whereas today this share is estimated at about one third (Düdenhoffer, 2003). For some brands, such as Smart, the proportion is as low as 20%. Other authors (Veloso, 2000 and EU 2004) provide even lower figures. In the meantime, major OEM either sold or closed most of their proprietary supply facilities³. The strategic choice of most OEM to "buy not make" opened new opportunities for existing and new suppliers. The move by OEM toward increased outsourcing has been motivated by efficiency concerns, being accompanied by a strong and sustained pressure on prices.

While increasing the share of external suppliers in the final value added, OEM have also been able to dramatically reduce the number of their direct suppliers in order to cut down transaction costs, stabilise quality and allow for closer co-operation.

Concentration on the distribution side

In the EU, the so-called "block exemption" that used to grant car distributors automatic territorial exclusivity contrary to general competition rules has been replaced by a new, more open market. Under the new rules, competition among dealers is enhanced while the link between sale and after-sale service remains unchanged. The new regulations require both manufacturers, dealers and repair shops to find a new "modus operandi". One of the possible outcomes (EU, 2004, and interviews in Switzerland) is a growing concentration of dealers and distributors, even at an international level. Such an evolution could, in the long run, challenge the presently strong negotiating position of OEM in retail prices and marketing strategies.

Policy issues

Automobiles are tightly regulated products. On the top of other regulations, specific traffic, safety and environmental regulations apply either to the use or production of automobiles. Because of the strategic macro-economic importance of the automotive industry in terms of employment, trade and technical knowledge, specific or even exceptional industrial regulations have been used by governments: the EU "block exemption" that expired formally in 2002; the Japanese voluntary export limitations or the US-Canada trade treaty. One important regulatory issue concerning SMEs is the extension of product liability. Indeed, carmakers press suppliers to take increased liability

for their products not only on the assembly line level but also at the repair-shop level. This attempt at “liability sharing” increases the financial pressure on automotive parts and sub-system suppliers.

Scientific and precision instruments industry

Lack of a general value chain structure

The scientific and precision instruments (SPI) industry includes complex and sophisticated investment goods or durables which require maintenance and accompanying disposables, such as medical imaging devices, as well as simple current consumption items, such as cheap watches. Nanomaterials and mechatronics are at the core of the SPI manufacturing activity. The extreme variety of situations and of products/services explains why the notion of value chains is seldom used in this sector either because the enterprises are “niche players” or because the products use technologies that are applied throughout a range of other products, but not necessarily in exclusively scientific and precision instruments’ products.

Most of the SPI products require a high level of innovation, a high level of customisation (and become rapid obsolete) and highly skilled labour in close proximity to the industry’s research and development labs. SPI products such as medical appliances (scanners, pacemakers or lasers) need specialised know-how, as well as skilled and qualified labour. The specialisation and complexity of many of the SPI products lead to high rates of exports compared to traditional manufacturing industries. Innovation in precision instruments is often spurred by sophisticated lead users at top universities, research laboratories, and major industrial firms. For some segments, the intensity of the academic and scientific research explains the emergence of a large number of start ups and the existence of many small specialised companies in the sector.

The SPI industries typically comprise a few large and highly diversified MNEs and a significant number of SMEs. In the US, as well as in Europe, very large companies dominate the retail and B2B wholesale markets for medical devices. The relatively high market concentration for medical devices can be explained by regulatory requirements which are tantamount to barriers to entry and may reduce competition. Dominant companies invest heavily in R&D and in intellectual property protection. On the other hand, SMEs make a significant contribution to medical device innovation. Smaller companies and start ups are more likely to innovate and feed larger companies with their smaller scale innovative technology (CERM, 2005).

Eucomed, the European Medical Technology Industry Association, warns that the medical technology industry is currently facing the important challenge of market globalisation. They claim that most medical technology products are designed to be used in specific patient conditions and comply with local regulations. In particular, in Europe most medical technology segments are national and thus too small. In order to allow European firms to cover R&D expenses, market segments need to be increased through a wider standardisation and better market access.

Policy issues

In order to stay competitive, SMEs must constantly improve their skills not only in regard to science and technology but also in the management of technology and knowledge of the market and its evolution. The heterogeneous SPI industry might benefit from existing government SME programmes that improve the linkages between research

institutions and SMEs, including pro-active development strategies that help SMEs to improve their technology awareness. The impact that national health regulations (technical, professional and organisational) have on SMEs is important: on one side they may protect niches; on the other side they prevent the exploitation of economies of scale. Promoting industry standards and international co-operation in product and production regulations should facilitate economies of scale and encourage exports.

Software industry

The software industry is very complex, with many complementary products necessary to form a systems solution. Together, the software suppliers, standardisation bodies, service providers, and users form a complex network: the "software ecosystem" as described *e.g.* by Messerschmitt and Szyperki (2003). The software suppliers are active in the conception, development and sales of various types of software such as general operation systems, general application software, specialised professional software, along with partially or totally customised, business-specific IT solutions.

The software industry is a recent one, subject to rapid and fundamental changes in production and distribution. Technological progress in computing power and the Internet have changed the ways in which software is produced and sold. Since physical limits such as processing power and storage capacity are decreasing in importance, the most significant constraints on software creation relate to managing complexity, development, seizing opportunities, and limited financial and human resources (Messerschmitt and Szyperki 2003). Continued progress in software technology raises complex public policy issues such as access to information, national sovereignty and security, law enforcement, protection of the private sphere, etc.

Since the diffusion of personal computers in the early eighties, the creation of software for the traditional hardware or computer system producers has rapidly become a complement to the production and sale of computers, as the availability of software increases the sale of the main hardware products. Software is indeed a complementary product to hardware, but the initial involvement in the creation of software has been followed by a pattern of "disintegration", because of the limited ability of the hardware producers to understand and to solve specific user problems. In the US for instance, unlike in Europe, the diversity of user industries has made it difficult for computer manufacturers to pursue vertical - sector specific - market strategies. The main reason lies in the fact that the gains derived by computer manufacturers from a more exclusive pursuit of hardware improvement were greater than their gains from controlling integrated software and hardware in a large number of specific markets. The emergence of independent software producers was facilitated by low entry costs.

Globalisation has much stronger effects on IT than on many more traditional sectors. Many IT products, such as software, have a very low weight-to-value ratio which allows the relatively easy global relocation of segments of the production chain to exploit the comparative advantages of different regions.

Software is an unusual economic commodity in several respects and not only because its marginal costs of reproduction are very low. Two broad categories of software "products" should be distinguished: vertical and horizontal market software. Vertical market software is sold to a particular sector and end users with specific needs – for instance to bookshops, car distributors, hospitals, etc. while horizontal market software is designed for general application such as word processing, calculation spreadsheets which are sold to many different industries and users. In general, the first type of software tends

to be more customised while the second one is by definition pre-packaged. With the almost simultaneous arrival of home computers, information services and programmable consumer electronics systems (e.g. video game systems), music and video player or telecommunications tools such as mobile phones and PDA, independent software producers and suppliers, as well as various system producers have also become important players in the markets of final goods and services.

Towards full integration

While the 1970s and the 1980s are referred to as the “information age”, the 1990s gave birth to the “Internet age” and the beginning of 21st century has already been called “the convergence age” thanks to the development of broadband sources such as fibre, Wi-Fi, and cable modems which provide very high-speed access to information and media. The result is a widespread convergence of entertainment, telephony and computerised information data, voice and video, delivered to a rapidly evolving array of Internet appliances, PDAs, wireless devices (including cellular phones) and desktop computers.

The Internet is the base of the success of a number of software and IT companies. For instance, the revenues of Yahoo!, which is the first worldwide Internet search engine, have been multiplied by a factor of 30 since its creation 11 years ago, and amounts to USD 5.2 billion in 2005. Its competitor Google, which was created in 1998, grew even faster as it surpassed Yahoo! in 2005 in terms of revenue (USD 6.1 billion).

In the “convergence age” multimedia is the growing segment of the software industry. With the success of the iPod and derived products by Apple (launched in 2001, 22.5 million units sold in 2005, representing sales for USDD 3.2 billion or 23% of company’s net sales) and other MP3 music players, platforms like iTunes (also by Apple) permitting music downloads have achieved the milestone of 1 billion songs downloaded in March 2005. The success of the video gaming segment of the software industry is evidenced by the fact there are three major players in this industry – Nintendo, Electronic Arts and Konami.

An alternative model: the open source

Traditional software production and distribution relies on the secrecy of the codes and procedure, which is increasingly considered as a key asset. On the other hand, for society at large, the value of holding a secret has to be traded off against the cost of doing so. That cost includes foreclosing the possibility of independent peer review, and betting on a product that is possibly less reliable than it could have been as an open source.

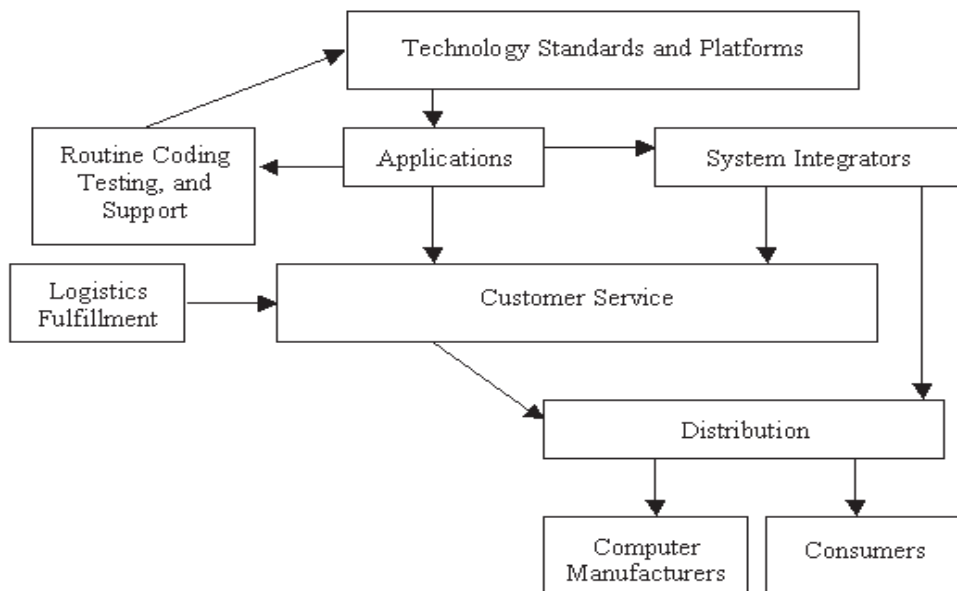
Open source software and operating systems (such as Linux) have developed as a novel form of collaborative software production and distribution, as the technical strengths of the products themselves have proved durable.⁴ From a statistically insignificant presence in 1997, the popularity of Linux and the free/open source software movement has exploded. Nowadays, open source software is even being considered as a useful alternative for e-government applications. For instance, some governments, international organisations and the European Union are financing research (like IDABC, Open Forum Europe, Floos Pols, etc.) to encourage the use of open source software and urge for greater “openness”.

Software value chain

In the software industry, the value chain is driven by technology standards and platforms upon which other products are produced. Control over technical standards is a critical factor in the chain, in order to secure, through standardised products, a major part of the value added (*e.g.* Windows by Microsoft; open source operating system Linux by Red Hat). Standard setters have the opportunity to lock in customers around their product lines. This lock-in effect is reinforced by users who must invest time and money in learning how to use the technology and the software.

Typically the major players in the software business, such as Microsoft (operating system) or Nintendo (gaming platforms), have gained control of technological standards and release software applications to the consumer. There are, of course, a number of smaller independent firms, active in customised software production or producing specialised applications fitted for a niche, local or national market. In general, SMEs alone are not able to determine technological standards and trends. They have to make choices as to which standards they will use in terms of hardware, operating systems, and developer software tools, when developing software for existing or potential clients. These choices are risky in the long term as changes may occur in market standards.

Figure 3.1. Software value chain (personal computer)



Source: Duke University, www.soc.duke.edu.

Public policy matters

Software has a low or negligible marginal cost of reproduction and replication. This implies that society has to grant businesses the right to control reproduction and to charge adequate prices, if investments are to be made in software creation, especially in packaged software. Otherwise, third parties could make a business by reproducing software, and competition would drive the costs of software to the low marginal cost of its reproduction. Therefore, the intellectual property (IP) protection policy has a key

influence on firm strategy and inversely the players of this industry may try to influence the structure of software-related IP protection, as evidenced by the controversy on software patents.

The protection of IPRs, trade secrets and ownership confers the right to control the dissemination and use of information and software, which is an essential element in the commercial relationship between software producers, distributors and the end-users. In most cases, access to the use of particular software can be gained (legally) by paying for a license which can take various forms. According to the license agreement, software can be directly installed and operated by the end-user or sold as a service over the network (by subscription or usage pricing).

The unauthorised copying, reproducing, usage, or manufacturing of (packaged) software may reduce incentives to invest in research and development and to develop new software. Frequent piracy may result in high prices and licensing fees. Investment and innovations, at the firm level, can be encouraged by a patent system, which grants a limited term of exclusive rights to make or sell products, which incorporates an innovation. Unlike trade secrets, the patent owner can exclude others from using an innovation. However, software patents are controversial because state of the art innovations are difficult to capture and describe with accuracy.

Tourism industries⁵

A global and complex set of industries

International tourists' arrivals grew from USD 25 million in 1950 to reach USD 808 million in 2005; international tourism receipts amounted to about USD 682 billion in 2005 (World Tourism Organisation, July 2006). The tourism sector is growing fast in many economies and is today an important contributor to economic growth, job creation and wealth. The market share of the OECD countries has been declining slightly over the last 15 years and now represents about 60% of world tourism.

Today, tourism is one of the most internationalised sectors of the world economy as it is a networked industry which links and integrates different sectors. Tourism activities include accommodations, restaurants, passenger transport services, travel agencies, tour operators, and cultural and sporting services.⁶ These industries gather a very large number of small businesses (e.g. family hotels, guesthouses, travel agencies, campsites, guided tour operators, etc.) as well as some global players (e.g. hotel chains, integrated tour operators, airlines, etc.). The dual nature of the tourism industries, the mix of public and private sector enterprises and the dominance of large integrated firms (e.g. tour operators or airlines) as part of the value chain characterise the global tourism economy. Tourism enterprises operate in a global market place but, for a large majority, remain actors at the local level.

At the country level, recent research indicates that OECD countries perform extremely well in terms of tourism competitiveness (regulatory framework, business environment and infrastructure and human, cultural and natural resources). OECD countries represent 84% of the 25 leading countries in the world in the travel and tourism competitiveness index.⁷ At the level of enterprises, the appropriate data are lacking to precisely assess their competitiveness. The study on the tourism industry shows that the globalisation of the tourism economy is forcing all enterprises to look at innovative ways to improve the quality and market orientation of their products, their profitability and competitiveness. This situation confronts enterprises with many new challenges, for

example to overcome their small size (a majority of tourism enterprises are micro-firms) in order to gain more power in the value chains or to augment their economic and financial performance.

The significant role played by major players

The international travel and tourism industry, which has considerably grown with the globalisation process, organises tourism activities to various destinations on an industrial basis. They offer standardised products and attractive services at competitive prices and develop global strategies that enable them to make the best use of the local potential worldwide. The major players represent less than 10% of the tourism enterprises but account for more than half of total turnover in the sector and for a significant proportion of employment. They are able to develop new tourism markets and offer new products. This helps them to increase the “customer value” and to reduce their production costs.

- *Hotel Groups.* Between 1995 and 2005, the six leading brands have remained in the same ranking for ten years. A study made by MKG Consulting shows that the growth rate (supply expressed in number of rooms) of the ten group leaders between 1995 and 2000 has been on average 85%. For the most part they have developed organically. Half of these chains are leaders on the economy segment and have a preference for franchise management. Strong growth in supply is mandatory for holding a position among the sector’s world leaders. Mergers and acquisitions have been the preferred means for achieving growth for the larger international groups. The major players benefit from their competitive advantage of global brand name recognition, better know-how and skills in networking, which develop opportunities for strategic alliances under good conditions.
- *Tour Operators.* As intermediaries between tourists and tourism service providers, tour operators bring together a variety of tourism-related services to form a complete holiday package, which is then marketed to customers either directly or through travel agents. Each package generally consists of accommodation (often including some food provision), transport both to and from the destination, ground transport within the destination, and events or activities such as excursions and social activities. The tour operator industry has been the subject of many strategic movements in the last ten years. In Europe, there has been an intense vertical integration and consolidation among tour operators in Germany, Scandinavia, France, Italy, Spain and the United Kingdom. The top providers today are fully integrated tourism groups that occupy a major share of both the air package tour market, the most significant sector economically, and the charter flight market. The vertical integration of tour operators increases the size of the tour operator and its revenues by lowering costs, for example, for distribution, product differentiation and improving operating efficiency.

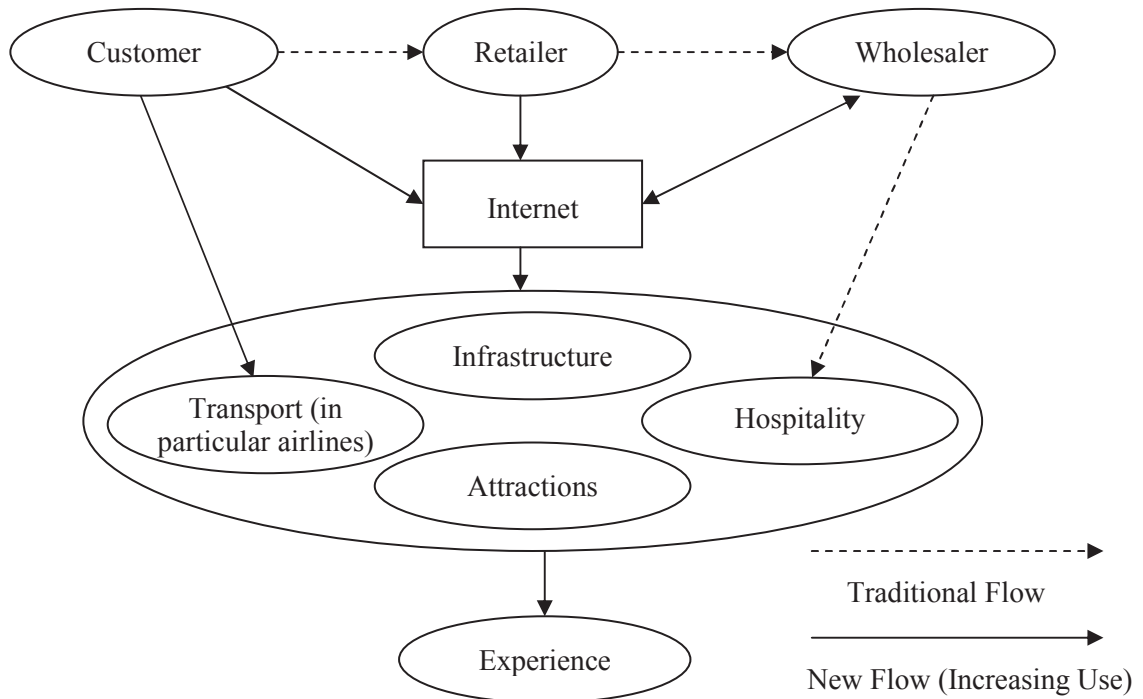
The growing role of the consumer and information technology in the governance of tourism value chains

Value chains in tourism rarely correspond to the linear model of production that may exist in other industries. Rather it reflects the fact that tourism is a networked and complex industry with multiple entries into the value chains. Moreover, travel and tourism services are information intensive, highly amenable to digital delivery, and targeted towards customers who are typically not local. ICT developments place the

consumer at the centre of the chain, which gives SMEs, with their small size and flexibility, an important role to play in customer satisfaction and individual treatment.

The Internet has brought about a fundamental change in that all categories of firms, large and small, from anywhere in the value chain, can now communicate directly with their end customers. The Internet has had a significant effect on the governance of the tourism value chain and it is transforming the travel and tourism services value chain. Although the producers of tourism-related products and services and the various intermediaries take a leading role, it is the consumer who now actually governs the tourism value chain. Consumers have different paths available when purchasing the end product, unlike in other industries. ICT allow the producers of tourism-related products and services to reach directly the consumer/tourist, bypassing the intermediary. However, the consumer-driven, highly fragmented and geographically dispersed tourism industry is still maintaining a significant level of intermediation. Tour-operators and travel agents act both as aggregators and integrators of the tourism services and products while other public/private entities like National Tourism Boards and Destination Management Organisations also act as non-profit intermediaries for the benefit of producers at the destination.

Figure 3.2. An example of value network for the tourism industry



Source: Tourism industry case study, Australia, 2005.

Networks and clusters are key elements for success of SMEs in tourism

The study on the tourism industries highlighted the key role played by other forms of inter-firm relationships. The consumer is looking for a comprehensive tourism experience which includes all the products and services (transport, accommodation, catering, entertainment, etc.). Such an “experience” cannot often be provided by a single small business. Tourism is by nature a “connecting business”. Over the last decade there has been therefore a considerable interest and dynamism in developing clustering and

networking among destinations and tourism related SMEs to strengthen their competitive advantage. Value-based SME networks may be established within a destination or a tourism cluster. Natural resources have long provided small tourism firms with an incentive to cluster. Many regions, however, lack the critical mass of firms as well as the critical infrastructure (hard, financial and human infrastructure) needed for cluster development and growth.

The body of literature in this area supports the hypothesis that belonging to a cluster or a network *i*) can enhance the productivity and the rate of innovation and technological development, *ii*) can help to build a common industry view to lobby the local authorities, *iii*) can overcome some disadvantages of small size by undertaking co-operative actions (*e.g.* in marketing), *iv*) can pool resources for human capital development, and in the end *v*) can enhance growth in tourism and the competitive performance of firms. In other words, clusters and networks can allow SMEs to combine the advantages of small scale with the benefits of large scale. SMEs in tourism can participate in several “overlapping” networks, depending on perceived value, such as the lowering of transaction costs and exploitation of economies of scale. The participation of SMEs in value chains and networks is also an incentive for entrepreneurs to take a more managerial approach to business and for SMEs to increase their capacity, thus improving their economies of scale and achieving cost reductions. Successful tourism clustering or networking requires a high level of cohesion, professionalism and industry knowledge.

Global value chains and networks: an incentive to improve in know-how and innovation

The impact of globalisation on the structure of tourism supply and value chains is evident. The participation of SMEs in value chains and networks contributes to the emergence of innovative projects, behaviours and activities by generating a process of continuous improvement to satisfy customer expectations. There is a high potential for niche markets, notably of high-yield markets for further SMEs and entrepreneurship development in tourism. ICT developments place the consumer at the centre of the chain which gives SMEs with their small size and flexibility an important role to play for customer satisfaction and individual treatment.

Despite these opportunities, the challenges are numerous. Small businesses lack skilled human resources, competences and financial resources to increase their participation in value chains, networks or clusters or to meet requirements for new product and process standards. Many SMEs in the hotel or travel agency sectors are dependent on global/regional players and are in fierce competition with other SMEs; this situation is creating a strong pressure on prices and is reducing the profitability of SMEs. As discussed in Chapter 4, many SMEs in tourism do not understand how they can benefit from increased participation in GVCs and therefore do not co-operate with large players.

In this context, government policy should focus on areas where the market may not sufficiently provide what is needed to improve the performance of the tourism industry, especially for small enterprises. A limited public intervention might enhance collaboration among the enterprises as well as an improved quality of policy for inter-firm and inter-regional networks and clusters. It should facilitate the participation of SMEs in GVCs or networks and/or help SMEs to upgrade their positioning in the system, for example to participate in GVCs.

Cinema industry

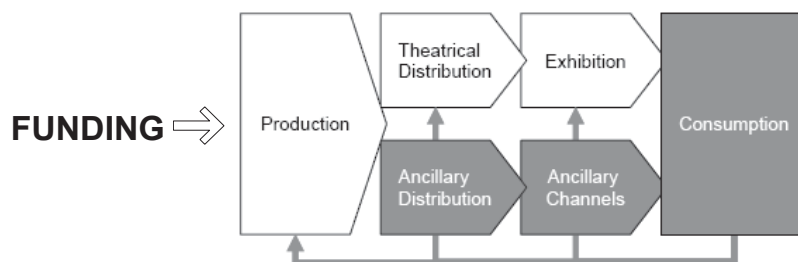
In the cinema industry the major studios simultaneously engage in four distinct business functions: financing, producing, distributing, marketing and advertising of their film and television properties. To carry out these functions they depend heavily on many smaller firms. The dominant position of major Hollywood filmmaking studios should not obscure the fact that SMEs are essential to the industry's operation, occupying important niches in the filmmaking and distribution process.

From top to bottom, the process is contract-driven. These contracts allow large and small enterprises to interact, usually on a project-by-project basis, and to opt out *ex ante* under normally well-defined stages and conditions. Use of such option-related arrangements is common in all creative industries and, in effect, acts as the glue that connects the many links in the value chain (Caves, 2000).

The financial architecture: the key issue

Both hedge and private equity funds are capable of providing upwards of USD 500 million to USD 1 billion in return for the rights to either “first-cycle” revenues of already released films (*i.e.*, revenue advance securitisations) or future securitisations of production costs for films yet to be released. It now appears that every major studio has co-investment deals with such funds, which have claims on revenues generated by the slate of films that they help finance, but only after the studio has been paid distribution fees and recouped expenses related to prints and advertising. Investments in production, prints and advertising for the average major studio release have climbed steadily since 1980 at a compound annual rate of around 8%, which is far above that of inflation (at least double) over the same period. This cost inflation greatly accounts for the much increased current need for funding as compared to ten or fifteen years ago.

Figure 3.3. Value chain for motion pictures



Source: Eliashberg *et al.* (2006) and Vogel and Christiansen (2006).

Production funds are made available only when the key elements such as final script, director, actors, and most importantly, distribution services, have been bound to the project through contractual agreements. Many small firms, including talent and artist management agencies, are fundamental to the contracting process: they are key links in a value chain that aligns the talent (directors, performers, cinematographers, writers and so forth) with specific production projects.

Funding is a perennial issue for companies both big and small given that the long-run upward trend in the costs of production and marketing shows no signs of abating. This is not related so much to the cost of technological implementation which tends to become less expensive over time, but more because of top-line talent – be they feature film directors, actors, musician-composers, or game and special-effects designers – who are likely to continue to command stiff premiums. However, new forms of securitisations of cash flow and of new financing structures are always in development and are an integral part of the industry's history.

Highly concentrated production and distribution

According to Motion Picture Association of America (MPAA) data, 611 feature films were produced in the US in 2004, of which 483 were released. The total number of films released by MPAA member studios typically accounts for around 90% of the total box-office generated. Other, smaller distributors, generate only 10% or so of the box office in most years.

Major studios may i) develop and support in-house 40% of their distribution needs, ii) joint-venture or buy rights through “pick-ups” and acquisitions account for another 30%, and iii) rent access to their established distribution pipelines, for a much smaller distribution fee (*i.e.* 12.5% to 17.5% instead of the usual 30%). Such “rent-a-studio” and pick-up deals greatly enhance the whole media ecosystem by adding a degree of diversity and creativity that would probably not otherwise have a presence.

The importance of advertisement investment

It is important to realise that all subsequent fees are related to the box office performance and distributor “rentals” account for less than 15% of the total revenues – DVDs, cable and satellite and television market licensing generate the remaining 85%. Although the box office now accounts for a much diminished share of total revenues, it is still the window that not only sets up the film's subsequent marketing and title recognition conditions but, moreover, absorbs and channels most of the advertising expenditures. For a major feature film in the US, such expenditure normally averages around 50% of the direct production (the “negative”) costs. Thus, films budgeted at USD 100 million for production may on average require an additional USD 50 million for advertising and promotional efforts.

The motion picture and television businesses globally face wrenching changes – from production, to distribution, marketing, exhibition, display devices, and even audience viewing habits and preferences. For instance, production of animation has gone from hand-drawn to computer-drawn with firms like Pixar (now part of Disney) and DreamWorks leading the way. Moreover, new art forms melding video games and films are now being developed by SMEs. Game playing experts have begun to make short films, called “machinima”, directly using the scenes and characters generated by the games themselves. Indeed, the difference between a live-action and computer-generated graphic is becoming indiscernible. And these new genres are not a *de facto* US monopoly.

Online distribution of filmed entertainment is also now in an early stage of experimentation. CinemaNow, Movielink (owned by Sony, Time Warner, Vivendi, Viacom, and MGM), and Vongo (introduced by Starz Entertainment Group/Liberty Media) are currently in the forefront, but the technology is advancing rapidly and new distribution strategies are, in response, beginning to take shape.

Is film merchandise? Public policy in question

The question of the economic status of a film is a debated question. According to the free-market approach, there is no ground whatsoever for public subsidies to the film industry. In the US, funding sources for US film production do not include direct government subsidies, as is commonly the case in European countries. This difference is reflected in the value chain at every point. But there are various local city and state government agencies in the US that have the ability to provide some tax credits and rebates for film productions in general. In France, champion of the *exception culturelle*, a system of public support exists through the Centre National de Cinématographie. The current French system is based on collection of funds through taxes on cinema products and its redistribution to players of the cinema value chain that often are small enterprises.

Different configurations of value chains

The industry value chains under review differ in many aspects and it is therefore difficult to make a comprehensive comparison between them. The choice of aspects to compare was a function of data availability and of the research questions concerning the role of SMEs (Table 3.1).

The key deliverables of the five industries differ in at least five dimensions:

- *Degree of heterogeneity* of deliverables produced by a given industry.
- *Nature of the deliverable*: product, service or both as in the case of software products.
- *Price range*: from tens of USD for movie products to millions in the case of sophisticated hospital equipment or software packages.
- *Speed of product innovation*: product or service life-cycle.
- *Durability of the product*: life-span of approximately ten years in case of automobiles, immediate consumption in case of cinema ticket or tourism.

Existence and capacities of a focal firm

Each contemporary global value chain can be divided into two segments, a segment in which all value added activities are centred on the production of the good or service, and a segment in which efforts to reach the final customer or user results in increased value added. The approximate moment or place where the focus of attention moves from production to the market is called here the ‘focal point’. It cuts the global value chain into an upstream segment centred on production and a downstream segment centred on the market.

For the purpose of this document, ‘focal firms’ are defined as those enterprises (major players) that consistently operate value adding processes on both sides of the focal point, *i.e.* both in production and in marketing/distribution. The term focal firm is inspired by the taxonomy of supplier networks elaborated by Harland *et al.* (2001). Accordingly, the automotive global value chain would combine a high focal firm’s influence with a low network dynamics, while for instance the global value chains for some medical and scientific instruments derive from highly dynamic networks with a low influence of focal firms.

The presence of focal firms is evident in the automotive industry, in most of the software activities and in most of the cinema industry. Their presence is less clear in the two other industries analysed, namely tourism and scientific and precision equipment. Also, in the industries reviewed focal firms are in most cases well-recognised major or global players listed on stock markets. A critical question that remains to be answered is what portion of value added in each of the segments is generated directly by the focal firms and what portion is left to partners upstream or downstream the chain.

An additional important aspect of the GVC structure refers to the sources of strengths of the focal firms in each industry and the level of concentration. For instance, while the command of economies of scale is still the key strengths of automakers, standard setting is critical in software activities.

Evidence suggests that in the automobile GVC, the focal point is located around 65% of the final value added which means that distribution and marketing efforts make up for the remaining 35% of the final value of the product. In scientific and precision instruments industry, the focal point could well be located around 80%, while in cinema industry it is about 50%.

Alternative and competing global value chain structures

It is important to know the nature of the GVC, that is whether the structure of the GVC is a unique one (as in automobiles), a dominant one (like in cinema), one of few (like in tourism) or if there is no clearly dominant global value chain structure as in scientific and precision equipment industry or, as in the cinema and software industries, if there is room for an alternative structure (such as remote delivery methods and piracy). The questions of contestability and innovation in the GVC structure are closely related to the one about the strategic portion of the GVC: what activities add the most value and what activities determine the next steps of transformation.

Role of SMEs in production and distribution

The place and role that SMEs actually play or could play in GVCs depend on the role and strength of focal firms and the prevalence of the GVC structure. In the *production segment*, the situation is more open, since focal firms in each chain configuration are, at least to a certain extent, either dependent on efficient suppliers (especially knowledge and innovations suppliers) or prone to competition by new entrants. This is the case for the scientific and precision instruments industry, in software, in cinema and above all in tourism. In the *distribution segment*, if the chain structure is firmly structured around strong focal firms the role left to SMEs is limited to “mass distribution”, to customisation as in the case of software, or to provision of additional services like in the case of automobiles.

Methods of trans-enterprise co-ordination or governance

Most of the GVCs under review involve long-lasting interactions between enterprises. In most cases these interactions extend beyond a textbook type of market transaction. Many different wordings have been used in literature extending from alliances or partnerships to outsourcing. However, none of these terms is precise enough to capture the ambivalent issue of trust, power, negotiation, reciprocity and in some cases even solidarity among enterprises co-operating within a global value chain. Despite the fact that these aspects extend beyond the accepted field of economic expertise, they are vital to understand the actual and potential roles of SMEs.

The most commonly known typology of “global value chains” governance is the one developed by Gereffi (1994), which differentiates between buyer-driven and producer-driven value chains:

“Producer-driven value chains are those in which large, usually transnational, manufacturers play the central roles in co-ordinating production networks (including their backward and forward linkages). This is characteristic of capital- and technology-intensive industries such as automobiles, aircraft, computers, semiconductors and heavy machinery. Buyer-driven value chains refer to those industries in which large retailers, marketers and branded manufacturers play the pivotal roles in setting up decentralised production networks in a variety of exporting countries, typically located in the third world. This pattern of trade-led industrialisation has become common in labour-intensive, consumer goods industries such as garments, footwear, toys, house wares, consumer electronics and a variety of handicrafts” (UNIDO, 2004a, based on Gereffi).

Each of these configurations is based, in the last analysis, on economies of scale achieved by the enterprise that is central to the value chain. In either of these configurations, SMEs cannot do more than be second or even third-tier suppliers. The typology of global value chains governance has been recently expanded (Gereffi *et al.*, 2005) along three characteristics: the level of complexity of inter-firm transactions, the extent to which information can be codified, and the degree of capability of the supply base in relation to the requirements of the transaction. This approach generates five relevant types of GVCs, extending from high to low level of “explicit co-ordination” and “power asymmetry”: hierarchy, captive, relational, modular, and market.⁸ When the governance is of the network type, in particular in the relational and modular governance form, SMEs are likely to have a more relevant role.

Are roles evolving?

GVCs are not static, as they are sequences of value adding activities that may change due to external factors such as new technology or regulation. They may also evolve because of internal changes such as strategies to outsource or abandon certain activities to partners.

In most well established GVC structures, SMEs have to face focal firms, for whom the stronghold in the chain is a strategic asset. These firms devote considerable resources to mastermind the critical portions of the chain and to streamline it, so as to optimise their own economic performance. They are able to manage critical knowledge, technologies and intellectual property assets on a global scale. Moreover, many focal firms have the financial liquidity necessary to quickly acquire “interesting” SMEs.

Symmetrically, SMEs have control of the basic knowledge of individual processes and local clients and they are quick at exploiting niches, but lack the overall understanding of chain structure and of key assets. As a result, they often end up in a weak negotiating position when confronting focal firms. Even when SMEs do have a comparative advantage, they may have difficulties defending it in terms of their share in total value added generated by the chain (see Annex B).

Table 3.1. Key attributes of the five industries analysed

	Automotive Industry	Scientific and precision instruments	Software	Tourism	Cinema
Long term industry trends	Deverticalisation accelerating in the 1990s; massive capacity subcontracting; geographical reorganisation of supply base excess capacity; growing concentration through M&A; tendency toward global technologies and regulations	Technology and demand driven; the development phase can be short	In the 1970s, with the emergence of PC automation of software production from hardware; with the "convergence age" higher degree of integration; software producers are part a wider IT system; technology and internet convergence or integration	Long term fall in travel costs; ageing and more leisure prone societies in OECD countries; wide use of ICT.	Growing vertical integration along the value stream from production to distribution; IT, especially the internet, is deeply affecting traditional distribution channels.
Key deliverable	Fairly homogenous but highly "branded" durable products; long product life-cycles; average price USD 10-20 000.	Extremely heterogeneous product lines often coupled with expert services or disposables; rather short, technology driven, life-cycles; price brackets: from a few USDD to millions for sophisticated hospital equipment	Set of instructions that move hardware; mass product or customised service; shortening life-cycle depending on standards and available hardware. Standard mass products ca USD 1000USD, professional packages may run in millions	Services related to all activities undertaken by visitors outside their usual environment. Price brackets: from few hundred to few thousand USD	Aesthetic performance/experience in a theatre or in private environment (home); very short life-cycle. Price brackets: USD 10-50USD.
Critical portion of the value chain	Access to the final customer; very high entry barriers	Technology and product innovation; reasonable contestability	Control of standards; certain contestability	Distribution of products/information	Access to distribution
Methods of delivery	Mainly unique - retail outlets	B2B and B2C	Multi-channel, internet based, fraudulent channels (piracy)	Services can be either sold in bundles or packages through intermediaries or purchased separately by the tourist	Multiple channels; cinemas, DVD, downloads
Existence of focal firms	Yes	Only in some highly specialised markets	Yes	Tour operators aspire to this role	In most cases, yes
Global Brands	Controlled by strong focal firms with important marketing budgets	Growing but still secondary	Present specially in horizontal (all user) markets	In air transport, hotel, tour operators and travel agency activities	Global reach of successful products; global stars
Key strengths of focal firms	Economies of scale; global optimisation of production; negotiation capacities with suppliers and retailers	Management of multiple technology platforms	Capacity to manage complexity, product architects (Microsoft), complex system operators (Google; Yahoo!)	Capacity to contract out in advance services of suppliers; quality control and insurance	Capacity of funding but also of advertising in order to limit the financial risks involved in production
Role of the focal firms	Strong: product design and architecture; key technology control; brand management; negotiation capacity	Rather weak: multi-technology and multi-product; mastery of synergies	Standard setting, on which other products are developed	Integrators of complementary "primary" services	Strong: intellectual property clearinghouses, production, and marketing of rights
Existence of alternatives GVC structures	No, but recourse to car rentals possible	Heterogeneity	Proprietary vs. open source philosophies	Direct access by clients to "primary" service providers	Illegal (recourse to piracy)

Table 3.1. Key attributes of the five industries analysed (*cont.*)

	Automotive Industry	Scientific and precision instruments	Software	Tourism	Cinema
Up-stream coordination mechanism	Stratification of suppliers, with some strategic niche suppliers	Networks, local clusters	Complexity management, subcontracting	Local clusters; destinations management	Contract with options on a project basis with durable right
Down-stream coordination mechanism	Growing control of retailers by the focal firms	Often direct distribution by producers: B2B	Retailers are or may be customisers for vertical market products	Global reservation systems; franchising in hotel industry	Contract with options on a project basis with durable right
Explicit governance	No	No	Possible	Franchising in hotel industry; locally joint supply	Interdependent contract network linking risks and rewards along the whole production chain
Global vs. local market	Global production involving potentially local clusters; global distribution	Production is dispersed (possible clusters); medical equipment products have to obey local regulations; elsewhere markets are global	Local adaptations (linguistic) may be required, but the hardware is global	Global distribution; local provision of tourism services	Localised production (clusters); global distribution
Role of SMEs in the upstream segment	Focal firms' supply chain structured into different tiers. First tier made of global enterprises. SMEs appear mostly in second and third tiers where they are mostly mass suppliers. Some SMEs enter first tier as high-knowledge suppliers, including R&D.	Possible independent of focal firms, but often dependent. SMEs are present at any segment of the chain, especially in innovation processes.	Potential innovators and challengers of standards and focal firms. In most cases, mass code suppliers.	Independent niche players, or linked to focal firms as ultimate producers of 'primary' tourism services; locally locked; franchisees	Exceptionally competitors of focal firms; in most cases component suppliers or retailers
Role of SMEs in the downstream segment	Ongoing concentration in retailer networks. Repair shops still mostly SMEs.		SMEs are retail customisers and application developers.	Traditional travel agents. Today, they lost their 'raison d'être' due to Internet delivery.	Shops for distribution of DVD and screen theatres but strongly dependent on movie distributors and producers.
Policy implications	Important: Security, liability and environmental norms: global convergence of norms	Local safety and professional norms; intellectual property norms	Very important: intellectual property norms and protections - lack of global convergence; public policy dilemmas	Important but limited: natural and cultural amenities are considered as public goods. Local support for destinations, safety and security, environmental and quality standards	Public support in question; cultural goods

Notes

1. This chapter was prepared by the Swiss research team led by Prof. Paul Dembinski.
2. Depending on the source, heavy vehicles and buses are either included or excluded from production and market statistics in unit terms.
3. Ford sold Visteon in 2000, and GM did the same with Delphi in 1999.
4. The open source movement has been the inspiration for increased transparency and liberty in other fields and the open-source concept has also been applied to media other than computers. It also constitutes an example of user innovation and “open source” is becoming an expression to mean that a system is available to all who wish to work on it.
5. The study on the tourism industries has been carried out by the OECD Tourism Committee. It focused on hotels and tour operators, including travel agencies [see CFE/TOU(2005)1, CFE/TOU(2005)3, CFE/TOU(2005)4, CFE/TOU(2006)9 and case studies for Australia, Austria, Germany-Jordan, Korea, Spain (Andalusia and Balearic Islands), Poland and Switzerland].
6. Tourism Satellite Account: Recommended Methodological Framework, UN, UNWTO, OECD and Eurostat, 2001.
7. World Economic Forum, *The Travel & Tourism Competitiveness Report 2007*, March 2007.
8. World Economic Forum, *The Travel & Tourism Competitiveness Report 2007*, March 2007.

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