Vancouver as media cluster: the cases of video games and film/TV

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I Introduction

If ever Joseph Schumpeter's (1942) notion of 'a gale of creative destruction' has applicability it is to Vancouver, British Columbia. Over the course of the last twenty-five years, immensely powerful gusts of economic change, cyclonic in their energy, have destroyed Vancouver's old urban economy based on processing natural resources like lumber and fish. In their place, a 'new economy' has been erected resting on creative, weightless industries like those in the new media. Consequently, the old inner city where resource activities happened, and where resource processing workers lived, has been torn up and remade. Even some of Vancouver's suburbs, particularly, the oldest, Burnaby, lying directly to the east of the city, has experienced a radical makeover as former light-industrial and warehouse spaces were reconstructed as movie studios and 'dream factories' for the manufacture of video games. The purpose of this chapter is to analyse the gale of creative destruction that has touched down in Vancouver, transforming the city into among other things a media cluster. In particular, we focus on two of the city's media industries, both of which generate over a billion dollars in revenue each year: video games, and film and TV production.

The chapter is divided into five substantive sections, and followed by a brief conclusion. First, we outline the recent historical transformation of Vancouver from a staples producing local metropole to a world city that is now one of the termini on the global media industry's international circuit of labour, capital, and ideas. Second, we discuss the origins, development and geography of the video game and film/TV clusters within Vancouver. Third, we describe the particular critical institutional contexts that differentially have born upon and shaped the development of the two clusters, and which include the role of the state, labour organizations, and non-profit institutions. Fourth, we identify the internal dynamics propelling each of the two industrial clusters, setting their respective future trajectories and constraints. Finally, we speculate about the two industry's future prospects that include the blurring of the boundaries that so far have kept them distinct.

Our analysis is based for the most part on semi-structured interviews. We completed 20 interviews in the film/TV industry and 35 in the video game industry. Interviewees were typically with key corporate and institutional informants. The interviews were carried out in the summer and autumn of both 2008 and 2009.

II The transformation of Vancouver and the rise of new media

For the first hundred years of its existence, Vancouver functioned as what Harold Innis (1956), the pre-eminent historian of Canada, called a 'local metropole' within the larger British Columbia (BC) staples (resource) economy. That economy rested on the extraction, processing and export of natural resources, most prominently in forestry, fishing and mining. The prime functions of the city as a local metropole were as a decision making centre, and as a storage and export entrepôt. It also carried out a small amount of manufacturing and processing especially within the inner city areas around False Creek and Burrard Inlet (Figure 1).

The corporatisation of the provincial resource sector after the Second World War was an important benchmark. It reorganised the economy along Fordist lines, creating general affluence and bringing the ‘good life’ to BC. It also solidified an internal core-periphery regional relation between Vancouver and the rest of the province. Vancouver undertook the local control function, as well as physical distribution, while the rest of the province undertook the grunt work of extraction and processing.

More specifically, Vancouver’s central business district (CBD) in the downtown peninsula was the site of corporate resource offices, especially for branches of firms whose headquarters were often located elsewhere (Figure 1). The downtown also provided ancillary producer services, such as in finance, including a penny stock exchange specialising in generating venture capital for speculative resource operations (particularly mining). To the north of the CBD was the harbour and linked to warehouse and transportation functions for staples distribution (not all of which were produced in BC). To the south lay False Creek, a hub for warehousing and transportation, but intermingled with some resource processing activities (e.g. sawmills, and fish packing plants), heavy industry (e.g. iron and steel foundries, and concrete plants), and working class boarding houses, apartments and houses. East of False Creek was more warehousing along with light manufacturing, and the principal working class residential neighbourhoods.

From the late 1970s, all three of BC’s staples industries – fishing, mining and forestry – experienced serious economic difficulties stemming from diminishing resource stocks, environmental conflicts, falling prices, plateauing markets, and various disputes with the US over jurisdiction and market access. Corporate resource firms, previously the backbone of Vancouver’s economy, went bankrupt, were radically downsized, or left the city altogether. Consequently, Vancouver in effect decoupled from the rest of the province, cutting its ties to the staples hinterland to which it was formerly tethered (Davis and Hutton, 1989). In the process the urban economy fundamentally reorganized. Vancouver lost 30 per cent of its head office jobs between 1999 and 2005, falling from 16,894 to 11,983 employees (and the only major Canadian city to lose jobs in this category; Statistics Canada 2006). Only four new office blocks were constructed in downtown between 1991 and 2009. Former office towers were even converted into condominiums. For example, the first ever modernist skyscraper built in Vancouver (1955-57), the head office for BC Hydro, was in 1998 transformed into a residential complex, the 242 strata suite, 'The Electra.'

The new economy that emerged in Vancouver was post-staples, post-corporate, and post-industrial. Moreover, it was wired in complex ways to global circulations of talent, money and technology. Beyond the video games and film/TV industries that form the focus of this chapter, new firms were to be found in a wide range of 'new economy' sectors including software design, animation, graphic design, music production, wireless technology, remote sensing, pharmaceuticals, biotechnology and fuel cell research. The resulting new economy has thus taken various forms, but an increasingly important constellation of activities is in the area of the new media. The new media is defined by Britton *et al.* (2009, 211) as 'the interrelated set of economic activities that produce digital, text, audio, or computer graphic material that can be accessed through the internet, films, kiosks, and related communication channels'.

In 2004 a large survey was undertaken of Vancouver's new media firms of which there were 569 (and representing more than 14,000 employees; Britton *et al.*, 2009).

Employment in those firms was divided roughly equally between suburbs, especially the municipalities of Burnaby, Richmond, and the North Shore, and the central city (Figure 2). And within the central city, there were pronounced clusters of new media in former warehousing and working-class residential inner city neighbourhoods: Yaletown, Gastown, and along Hastings Street (Victory Square) (Barnes and Hutton, 2009). The size distribution of the firms fitted very much with the post-corporate designation, with three quarters of new media companies in Vancouver having less than ten employees, and with only two percent with more than a hundred (Britton *et al.*, 2009)

The basis of Vancouver's economy had thus profoundly shifted. It was no longer a city based on the processing and distribution of staples resources. Its central products were now weightless, digital, requiring not brawn and muscle from workers but mental agility and creativity. Employees of the new economy were not high-school drop outs, but graduates of the Vancouver Film School and the Emily Carr School of Design. Moreover, as this new economy emerged the city changed geographically to accommodate it, actively egged on by the Vancouver City Planning Department. Former resource processing and warehouse spaces in the inner city were zoned for residential development, as homes for the creative class. And intermingled with the high-rise condominiums were work places and commercial spaces – converted offices, loft studios, bars and cafes, faux piazzas, and the full spectrum of retail bric-a-brac associated with the consumption of the new class (Hutton, 2008, ch. 8).

But Vancouver's new economy is not a homogenous block. There is considerable sub-sector variation that affects industrial organisation, sources of funding, relationship to technological change, institutional support, and the form and segmentation of the talent that works in it. Such variation is seen clearly in our two case studies: video games, and the film/TV industry.

III Origins, development and geography of Vancouver's video game and film/TV clusters

(i) The video game industry

The first video games ever produced were in the 1950s, a result of bored Cold War Pentagon researchers playing around on a cathode-ray tube (Dyer-Witheford, 2004). It took another good decade for the first commercial game to be sold, *Computer Space* in 1971 (Kline *et al*., 2003, ch. 4). But from that moment the industry grew exponentially with global revenues in 2007 reaching US $41.9bn, with estimates that by 2012 sales will be US$68.4bn (Caron, 2008).

The origins of Vancouver's video game industry are in the early 1980s, with two suburban Burnaby schoolboys, Don Mattrick and Jeff Sember. They began designing and selling digital games out of the basement of Mattrick's parent's house, producing their first published game, 'Evolution', in 1982. They formed the company Digital Software Incorporated (DSI) in 1985, and with Accolade, an American publisher, developed and distributed a series of racing and sports games such as the *Test Drive* series. By 1988 Mattrick had bought out Sember, and DSI had moved to an old warehouse in the inner city Yaletown district (over a pub). Rents were cheap, there was ample room for studio space, and the neighbourhood was already acquiring chicness as the first gentrifiers moved in. Between 1985 and 1991, DSI produced 20 games.

This success led Electronic Arts (EA), a giant California-based multinational producer and publisher of video games, to buy out Mattrick. It acquired DSI in 1991 for CDN$11m, with Mattrick hired in a key executive position within the new company, EA Canada. Not all the former DSI employees acquired by EA Canada were happy with the new arrangements, however. The same year that DSI was bought out, a disgruntled group of them formed a new firm, Radical Entertainment. But within six years some of those same employees were moving on again, starting yet two more companies, Barking Dog and Relic (both in 1997). This process of new firm creation though splitting we will call ‘firm fission’: one firm begetting another firm through the mechanism of employees leaving and setting up a new company (Kyllo, 2009). Figure 3 represents the entire family tree of Vancouver game developers produced by firm fission. The city is now on its fifth generation of firms, with the original firm Mattrick and Sember’s DSI (Kyllo, 2009).

At the end of 2008, the total revenue of Vancouver-based video game firms was around CDN$1.5bn (EA Canada made close to a billion dollars). There were approximately 3500 jobs, and 145 firms. The firms ranged in size from the very large – EA Canada had roughly a thousand employees – to several SMEs like Hothead Games, Slant 6, and United Front each employing between 100-150 workers, to a large number of very small companies that included many single-person start ups.

Central to the fission process undergirding the Vancouver video game industry was the presence of EA Canada. It was the anchor for the whole sector, providing the prime source of new entrepreneurs of new firms, a lure for urban talent and capital, and the buyer of subcontractor services. In a well known paper, Anne Markusen (1996) drew up a four-fold typology of forms of cluster development. Vancouver’s video game industry best fits her ‘hub and spoke’ type. This is where a single key firm is in the centre and around which smaller firms rotate. In Vancouver’s case, EA Canada is the hub, and the SMEs and start-ups are the spokes.

In terms of the geography of the video games cluster, Figure 4 shows the geographical distribution of video game firms within the Vancouver metropolitan area. As one would expect, the map shows broad similarities to the earlier one of the new media (Figure 2). Within the inner city, the main cluster is in Yaletown, especially along a single road, Homer Street. In the larger metropolitan area, apart from the inner city, the greatest concentration is in Burnaby around where EA Canada is based. In 1999, they moved into a purpose built facility, dubbed the ‘Dream Factory’, and opened by the then Canadian Prime Minister, Jean Chretien.

(ii) The film/TV industry

The development of Vancouver as a film/TV production centre is intimately related to the post-war organizational restructuring of the Hollywood studio system and the concomitant rise of location shooting on a large scale (Christopherson and Storper, 1986; Gasher, 1995; Elmer and Gasher, 2005). Although filmmaking in British Columbia dates back to the turn of the 20th century (e.g. Browne, 1979), a significant film industry only emerged from the late 1960s.

As a location, Vancouver has been, and remains, extremely well placed to benefit from the opportunities created by the vertical disintegration of the Hollywood studios. The city is close to Los Angeles (2.5 hours flying time), is in the same time zone (thereby allowing easy coordination of activities between the two centres), has a mild climate which allows year-round filming, and offers a large range of different scenic locations within one or two hours drive of central Vancouver. It has also benefited enormously from the low value of the Canadian dollar against the US dollar which has held uninterrupted since 1976 (except for a brief four month blip in 2007). In 2002, the Canadian-US dollar exchange rate reached an all-time low of 63 cents US before slowly climbing. When lower Canadian wage rates and government incentives are also included – an issue we will return to shortly – savings of 20-30 percent can be realised by shooting productions in Vancouver as opposed to Hollywood.

This last point indicates another advantage held by Vancouver, namely the proactive role of both the provincial government and its labour unions (Gasher, 2002). We discuss both institutions in more detail in the next section, but their formative function should be recognised here. With respect to government, the BC Film Commission was inaugurated in 1978. Its main task has been to facilitate film production for Hollywood, a one stop shop for prospective producers, smoothing production and investment. Likewise the key labour unions involved in film/TV production – the Teamsters, and two locals of the International Alliances of Theatrical Stage Employees (IATSE) (Local 669 camera operators, and Local 891 technicians) – have gone to great lengths to meet the needs of Hollywood producers. Murphy (1997) argues that the technical unions in particular have played a pivotal 'entrepreneurial' role in the development of the industry in Vancouver.

Finally, also important were key individuals who made a difference just as Don Mattrick did in the video game industry. Early on in the film industry it was Stephen Cannell, a Hollywood TV writer, producer, creator, and actor, who came to Vancouver in the early 1980s to shoot his new TV series, *21 Jump Street*. To cut costs he opened new studio facilities, the North Shore Studios (formerly Lion's Gate Studios), and the first of five major studio spaces to be build in the metro area. The second was the Bridge Studios, converted from an old bus depot and financially underwritten by the provincial government.

The combination of these factors has now made Vancouver one of the leading 'cinematic cities' of North America (Lukinbeal, 1998). Over the thirty year period 1978-2007, British Columbia's film and television industry generated some CDN$15bn in revenues. Annual revenues first passed CDN$1bn in 1999 and have hovered around and in some years significantly exceeded that mark ever since (see Figure 5). The industry – widely considered to be the third largest in North America after Los Angeles and New York – accounts for an estimated 23,900 full-time equivalent jobs in BC (13,200 in direct employment, 10,700 indirect) and an average wage that is around twice the provincial average.

As its nickname 'Hollywood North' indicates, Vancouver's fortunes are closely connected to those of the Los Angeles film and television complex, with inward investment accounting for between 60 and 80 percent of total spending each year. In Lukinbeal's (2004) terminology, Vancouver is an 'edge center' – a Hollywood satellite location that benefits from cost-based 'runaway' production. Moreover, Vancouver is perhaps best described as a *television* production cluster, with TV accounting for 75 percent of production expenditure in 2007 (*cf.* Tinic, 2005). Table 1 breaks down the production data for 2008, showing an unusually strong year for feature film production (44 percent of the total) but a more typical split of foreign to domestic production in budget terms (70 percent to 30 percent). Overall, BC accounts for fully two thirds of Canada's foreign location and service production (CFTPA, 2009).

As an industry it is constituted by a mass of independent small firms – Scott and Pope (2007) estimate there may be around 2000 – which then articulate with labour provided by the various union locals on a project-by-project basis. Given the distances between Vancouver and the nearest large-scale production centres (Toronto and Los Angeles) most firms are highly locally-embedded, with many undertaking all of their business within the Vancouver metropolitan area.

That said, the genesis and emergence of the Vancouver film industry has largely depended on the spending decisions of a small group of large US studios and media conglomerates ('the eight giants' as they are sometimes called: Fox, Paramount, DreamWorks, Sony, MGM, NBC Universal, Time Warner, Disney). The studios often have complete financial and creative authority over the projects filmed in Vancouver, with control exercised indirectly through subcontracting networks rather than through direct ownership. In some instances, key production personnel are sent to Vancouver to oversee or manage particular projects through a temporary subsidiary. In others, the complete production process is subcontracted to a Vancouver production company. The small firm networks of the Vancouver film industry thus relies ultimately on funding from US studios and TV networks. The key group that engages with financial decision-makers in Los Angeles are Vancouver-based producers. Over the past thirty years, many have built strong personal relationships with Hollywood studio executives. In this sense, they, along with studio managers and a few government officials, are crucially embedded in extra-local personal relationships that facilitate the continued flow of capital from Los Angeles to Vancouver (Coe, 2000a).

In contrast to Markusen's hub and spoke cluster type that fits Vancouver's video game industry, the film and TV sector perhaps represent a hybrid of her Marshallian and satellite types (Coe, 2001). On the one hand, key investment, and creative decision making comes from outside the cluster, in this case, from Hollywood. On the other hand, that investment creates a locally formed Marshallian industrial district, in this case, Scott and Pope's cluster of some 2000 independent small firms operating within the Vancouver metro area.

As for the video game industry, the geographical distribution of film and TV firms can be plotted (see Figure 6). There is clustering in the old inner city industrial areas like Yaletown, Victory Square, and Gastown, as well as in Mount Pleasant (nicknamed 'video drive' by one of our informants). But the clustering is more suburbanized than for the video game industry. Pulling the industry to the suburbs, to North Vancouver and especially to Burnaby, are the major studio spaces. There are five major studios in the metro area (Figure 6): North Shore Studios in North Vancouver, Vancouver Studios but on the boundary with Burnaby, and three Burnaby studios, Bridge, Mammoth, and the latest which opened in 2008, Canadian Motion Pictures Park.

IV Institutional contexts

As many studies have made clear (see the review in the first chapter), the coherency and development of an industry cluster is often tied to a set of formal and informal institutions. This is no different in our study. Both the video game and film/TV clusters in Vancouver are regulated and shaped by a set of interrelated institutions that give each a distinctive form, providing geographical advantages in attracting capital and achieving a strong bottom line.

(i) The state

The first of the institutions is the state, in particular the local state, the provincial government of British Columbia. Until very recently, the state treated the video game and film industries quite differently. The BC government gave the video game industry almost nothing, fomenting bitterness among video game firm owners. Until 2010, the sole state subsidy for the video game industry was a 30 percent tax credit but given only to the providers of venture capital, and even then up to a maximum of only CDN$60,000. There was nothing for operating costs, contrasting with various generous subsidies offered by other provincial jurisdictions in Canada. In Quebec, for example, Dyer-Witheford (2004) estimates that the local state provides a subsidy of 25 percent for every game produced in that province mainly through the provision of tax credits on labour costs. In Ontario, which has had only a minimal video game industry, the provincial government announced in July 2009 that it had attracted Ubisoft to Toronto with the lure of a CDN$263m grant that need not be paid back provided the firm stayed in the province for five years. Ubisoft agreed to invest CDN$500m and create 800 jobs in Toronto (Ebner, 2009). It was precisely because of these kinds of financial subsidies given out by other provinces that led the BC provincial government in early 2010 to implement a tax credit of 17.5 percent on labour costs in the development of video games. One firm owner, Doug Tronsgard of Next Level Games, thought this change would be extremely beneficial. In an interview he said the tax credit ‘will do two things. It will stop job losses that have been happening now, and it will prepare us properly for future growth in Vancouver. Before the tax credit it didn’t make sense to grow your business in Vancouver. I know that we will be adding people to our company now’ (Andrew, 2010). It is important to note, however, that this still falls significantly below the 35-40 percent offered by Ontario’s Interactive Digital Media Tax Credit (OIDMTC).

In contrast, state subsidies were from the beginning generous in the film/TV industry of BC, and provided not only by the province but also by the Canadian federal government. In 1978 the BC government inaugurated, and has since then continuously funded, the BC Film Commission (now a branch of the BC Ministry of Tourism). The Commission provides a range of services for producers including location scouting and surveys, immigration advice, script breakdown, an extensive photo library of potential locations, and community and business liaison services. In addition, the province offers a series of tax credits on labour costs and which increase with the distance away from Vancouver that filming occurs. The basic credit is 33 percent on top of which can be added up to another 12 percent if production is carried out at a ‘distant location’ outside the city. Additionally, the Federal government offers a tax credit of another 16 percent on labour costs. Although the basic BC tax credit rates for labour increased in 2010 (from 25 percent to 33 percent), some in the industry still do not think it is sufficient. This is because other jurisdictions in Canada – in what may be a race to the bottom – have instigated greater subsidies. For example, the Ontario government in June 2009 announced that they would cover 25 percent of *all* movie or TV production costs, a move quickly matched by Quebec. In response, some local BC movie production companies – for example Bright Light Films

– announced that they would be moving to Ontario. That said, none of the Hollywood studios have yet suggested that they are ready to move on. The representative in BC of these Hollywood producers, Don Cott (Vice-President, Canadian Affiliate, Alliance of Motion Picture and TV Producers (AMPTP), personal interview, September 2009), told us that the sheer density of infrastructure and trained labour in Vancouver has created its own inertia, anchoring Hollywood North in Vancouver.

Across both industries, the setting of incentive levels somewhat below those of competitor jurisdictions reflects two interrelated issues. First, in political terms, there is an element of hubris on the part of the provincial government that BC has sufficient natural advantages in these sectors, a viewpoint sharpened in recent times by the increasingly parlous state of the province's public finances. Second, the depth and quality of the labour pool in Vancouver acts as a significant counterweight to inter-provincial disparities in incentives level.

(ii) *Industry associations and labour unions*

A major difference between the video game and film/TV industries is the latter is heavily unionised while the former is not. The video game industry does have a strong industry association, the federally incorporated, non-profit, New Media BC (established in 1998). New Media BC's overall mandate is 'to strategically promote and connect BC's thriving digital media companies and grow the industry by enlisting the support of government and private sector partners from BC and abroad' (http://www.newmediabc.com/about.php). Including among its functions is its role as a clearing house for labour which it does by offering a ‘job board’ and organising networking meetings and job fares. Unions, though, have never been let into the industry.

In contrast, following the tradition of the former Fordist model of film production, unions are a vital component of the Vancouver motion picture industry. Key to their successful involvement has been the ability to secure autonomy from their respective national umbrella organisations allowing them to focus on the particular needs the inward investors that dominate spending in the BC industry (Coe, 2000b). Significantly, in 1996 the three unions representing the Teamsters, and two IATSE locals formed a coalition that negotiates collectively on a single master agreement on a three-year rolling basis (the current master agreement runs from March 2009-March 2012). There is no similar inter-union agreement anywhere else in North America, and it is a major incentive for Hollywood producers to invest in Vancouver. It provides certainty around wage rates, guarantees uninterrupted, stable production, and for Hollywood producers means they deal with only one labour bargaining unit. That bargaining unit, the BC Council of Film Unions, also offers differential labour rates to attract independent producers, and actively solicits new outside business.

In addition, the three unions along with the BC Council of Film Unions are members of what is in effect a super-committee, the Motion Picture Production Industry Association (MPPIA), which acts as ‘the voice and vision of the motion picture industry in BC’ (http://www.mppia.com/). Consisting of 80 members, including representatives from industry (studios, producers, equipment suppliers, and post-production firms), government, and organised labour, MPPIA settles internal and external disputes, and also act as a vehicle for promoting the industry to potential investors. Again, there is nothing like this organization – in essence a form of cross-class alliance – anywhere else in North America. It ensures that all the institutional parts necessary for the reproduction and growth of the movie industry in BC are talking to one another, and acting in concert to promote the full interests of the sector.

(iii) Talent and training.

At the core of both industries is the talent base of creative labour, and spilling over to the issue of the institutional infrastructure of education and training. Of course, much of that education and training is internal, organic and cumulative. There is much learning on the job, and learning from others. Certainly, the fission process described earlier of new firm formation in the video game industry contributes to this process by transferring skills from one firm to another through the movement of key creative personnel. Likewise the project-based character of work contributes by ensuring that labour movement across firms is continually sustained and is the norm. More generally, there is a culture of restlessness within the two industries that promotes recurrent flux and movement. The only constant is change. As Don Mattrick said in a recent interview: 'If you look at the innovation and growth [in Vancouver's video game industry] that comes from that cross-pollenization [of people changing jobs], that sharing of ideas, that new experience, it's an accelerant. We have that culture here. It's what the industry is' (quoted in Kyllo, 2009).

Both in film/TV and video games there was a similar pattern where initially in the early history of both industries specialised labour and services were brought and bought to Vancouver. But in both cases that is generally no longer true. Much of the talent is now local, indeed locally trained, or comes on its own volition to Vancouver, drawn by the critical mass and reputation of the creative industries cluster. There are exceptions, but not many. In the film and TV industry, star actors come from outside, but there is a phalanx of local extras and supporting cast members. The upper echelons of production – directors, producers, writers – tend also to be non-local (either from Hollywood or if it is Canadian TV, Toronto), but technical production staff are from Vancouver. There is a sense in the industry that the city has crossed a threshold: it now possesses sufficient depth and breadth of talent to undertake the full array of pre-production, production, and post-production services necessary for the delivery of major motion pictures and TV programmes. The same is true, perhaps even more so in the video game industry. Talent is brought into the city by HR departments, sometimes from distant places – the collapse of the industry in London has led to some significant high-end game designers moving to Vancouver. But in general, it is outside firms that move into Vancouver to tap into its established talent pool. As noted earlier, our research suggests that this is a highly significant factor which buffers any temporary economic disadvantages compared to other localities – either due to exchange rate shifts or changes in fiscal incentives – allowing the city to retain stable or growing levels of inward investment in these two industries. At the opening of its Vancouver studio in April 2010, for example, Pixar managers were very explicit that it was the combination of talent base and government incentives that make the city the ideal location for the new venture (scheduled to employ 75 staff by the end of 2011) (CTV News, 2010).

Contributing to the growth of that talent pool have been various educational institutions operating in the city, both public and private. On the public side includes the two universities, University of British Columbia (the Film and Theatre Department and Computer Science) and Simon Fraser University (the Centre for Contemporary Arts), as well as the community college, British Columbia Institute of Technology, and the Emily Carr Institute of Art and Design. On the private side is the Vancouver Film School (VFS). Opened in 1987, and currently ranked 5th in the world, it now offers thirteen different programmes – including acting, video game design, animation, writing – and spread over six buildings in downtown Vancouver with its centre in the old inner city neighbourhood of Victory Square. The School's establishment was a direct response to Hollywood runaway productions. The latest addition to the educational pantheon has been the Great Northern Way Campus, a unique collaboration among the four publicly funded educational institutions in the city: University of British Columbia, Simon Fraser University, Emily Carr Institute of Art and Design, and British Columbia Institute of Technology. The four have combined to create on False Creek Flats, an old inner city industrial site purposely cleared in the 1990s for new economy activities, what the Great Northern Way Campus's web site calls a 'digital village destined to change the way people think about art, science, learning and commerce' (http://mdm.gnwc.ca/). It might not do quite that, but it offers a radical curriculum where studies of the visual arts, industrial arts, writing and literature, technical expertise in computer hardware and software, and business studies are blended together, preparing the next generation of workers for Vancouver's Brave New World of the New Economy.

V Industry dynamics and future prospects

The advent of severe global recession in 2008-9 makes the current juncture a difficult one for gauging industry dynamics and the growth prospects of the two industries. It is important – though sometimes difficult – to distinguish the shorter term effects of economic downturn from longer term developmental trends.

In terms of video games, since the autumn of 2008 there are changes that possibly are shifting the industry to a new configuration. Partly this has been prompted by the financial crisis of 2008, and the ensuing recession, but also by industry reorganisation and technological change. Such changes are most manifest in Vancouver's cluster becoming increasingly corporatised, with former independent SMEs bought up, and in some cases closed down. Thus, Microsoft and Disney are now both found in the city, with Disney operating under the name of Propaganda Games in Yaletown (although it announced layoffs in early 2009), and in 2008 Microsoft located in the suburb of Richmond. Radical Entertainment, the original fission firm, was bought in 2005 by the French multinational, Vivendi, which in 2007 merged with Activision Blizzard. In February 2009 another French multinational video game publisher, Ubisoft, came into the city by buying the locally owned SME Action Pants. As these new large multinational companies entered Vancouver, the anchor firm EA Canada began experiencing difficulties. Those began in early 2009 with EA cancelling the proposed opening of a boutique studio in Yaletown, and later followed by the closing down of its downtown Vancouver subsidiary that it had bought in 2002, Black Box games. In December 2009 EA further announced it was laying-off 1,000 workers worldwide from a staff of 10,000. It is unclear exactly how these changes will make a difference long term, but so far they primarily represent a consolidation of the video game industry in the city through the investments of a series of large international corporations.

While concerns about the lack of labour costs subsidies have been answered initially at least by the advent of the BC Interactive Digital Media tax credit in February 2010, two other challenges arguably face Vancouver's industry. The first relates to future platforms for games development in the industry. Several of our respondents felt that the standard format of big set piece games may be coming towards the end of its natural life and that in future there would be more use of the internet for downloading games on an ongoing basis, either for a fee, or for free and with users being charged for various avatars, accessories and the like. The second relates to the shifting landscape of international competition in games production. Industry participants were concerned that the sector should not go the way of the London industry which has struggled due to cope with the high costs of labour and property. This is particularly a concern for the larger transnational companies in Vancouver, who have to make trade-offs between the quality of the city's workforce and the cheaper programmers and designers on offer in other locations, most notably Eastern Europe and Asia. Singapore in particular was noted as an emerging hotspot in this regard.

The picture in film/TV is somewhat different. In large part, the basic production model of servicing US productions has stayed the same for several decades now. For some commentators on the 'new map of Hollywood' (Scott, 2002), Vancouver is simply a satellite production location dependent on maintaining its exchange rate and incentive cost advantages. The view is summarised nicely by Gasher (2002, p.109) when he argues that 'the BC film industry is overly dependent on Hollywood, rendering it vulnerable to such factors as the Canada-US currency-exchange rates and shifts in labour costs among competing jurisdictions. There is nothing to prevent Hollywood producers from leaving

British Columbia as suddenly as they arrived should any elements of British Columbia's competitive position change'.

And yet they have not, at least in aggregate terms, and sustaining business levels at or around the C$1bn a year during the 2000s is a significant achievement in itself given the increasing number of locations seeking to tap into this market, both elsewhere in Canada and the US (e.g. Ontario, North Carolina and Florida in addition to initiatives to retain production in long-established centres of Los Angeles and New York), and beyond (e.g. the UK, Ireland, Czech Republic, Australia, New Zealand etc.: see Goldsmith and O'Regan (2005) on global studio provision). Comparing Figures 5 and 7 suggests that while there may be some relationship between exchange rates and production volumes, it is not a strong signal. While the 'tapering off' from 2000-2004 detected by Scott and Pope (2007) is broadly in line with exchange rate movements, the rebound in production levels in 2005 and 2006 is not, and the writers' strike in 2007-08 was a significant contributor to the fall in revenues in 2007. Exchange rate variations are far from all determining, and our interviews suggested that the ability of Vancouver to supply up to 30 high quality crews at any one time within a stable and predictable labour relations environment – in addition to the broad range of other locational and fiscal attractions of the city – had served to maintain its position as North America's preeminent 'full service' production location for Hollywood in the medium term. The main impact on the ongoing recession, it seems, has been to alter the balance of Vancouver's revenues, with a relatively small number of foreign funded features in 2008 and 2009 making up for a slump in TV production as both Canadian and US networks have struggled to deal with a collapse in advertising revenues.

That being said, despite strenuous efforts, Vancouver has not been able to break out of this basic model of growth (*cf.* Coe, 2001). The indigenous industry continues to struggle to get off the ground, caught between the difficulties of fulfilling Canadian content requirements and tapping into TV networks based primarily in Toronto and Montreal on the one hand, and the need to develop more generic content to secure distribution deals beyond Canada on the other. Technological change has meant that Vancouver's attempts to break Los Angeles' hold on high value-added post-production activities have largely been stymied – digitisation means daily footage can easily be beamed to US studios and networks. Moreover, foreign ownership of support services such as camera supply, lighting services and post-production has steadily increased. The past decade, it seems, has served to entrench the Hollywood service production model yet further in Vancouver. Breaking free of Hollywood control simply does not seem possible given the stranglehold of the US studios over the critical (and inter-linked) activities of finance and distribution (Coe and Johns, 2004; De Propis and Hypponen, 2008).

VI Blurring the boundaries?

It seems likely that the futures of the video games and film/TV sectors in Vancouver will become increasingly intertwined. Currently, in institutional terms at least, the industries are distinctive with separate trade associations (New Media BC and MMPIA respectively) and different provincial incentive schemes. And yet, as Figure 8 suggests, growth in activities 'in between' the two sectors has been strong over the past decade. While animation has long been an important subcomponent of the film/TV industry, its relative importance has increased, expanding from 4.5 percent of total revenues in 1998 (CDN$36.6m) to 10 percent in 2008 (CDN$122.2m). The decision of Pixar to open a Vancouver studio in 2010 can only add impetus to developments in this area.

Alongside this, the city has seen significant expansion of its visual effects industry in the past decade. These firms are not simply involved in adding visual effects to productions shot in Vancouver, but are plugged into wider international divisions of labour, and many operate at the cutting edge of the industry. There are at least 30 visual effects firms in the city at the present time, and as one respondent described, 'You've got all these visual effects companies up here, which are quite creative, and they don't have to be anywhere near the editorial process or the finishing process. And they're doing quite well, and with various forms of remote review and approval, it's quite manageable…' (personal interview, September 2009). The sector contains a number of local firms, but in employment terms is dominated by the Vancouver branches of large international post-production and visual effects houses such as Technicolor and Deluxe.

The drivers of growth in these areas are at least threefold. First, and as described earlier, Vancouver's educational infrastructure appears to be adept at supplying workers with the right combination of technical and creative skills to work in the areas of animation and visual effects, supported by the livability and lifestyle offered by the city. Second, as with video games, there have undoubtedly been 'push' factors in operation elsewhere, with wage and property issues in other jurisdictions increasingly the relative desirability of Vancouver at the international level. And, once again, public subsidies are important. The DAVE – Digital Animation or Visual Effects – tax credit was introduced in 2003, offering a 15 percent tax credit on labour spending on animation and visual effects activities in BC. For many industry observers this has been a key development, perhaps reflected in the fact that the credit was increased to 17.5 percent in February 2010 as the inter-provincial competition for jobs in this area ramped-up further (Ontario's Computer Animation and Special Effects (OCASE) tax credit currently stands at 20 percent of eligible labour costs).

Our tentative suggestion here is that strong growth in these activities is increasingly acting as a bridge connecting the film/TV and video games clusters in functional terms. We are not alone in making this assessment: according to Vancouver's Economic Development Commission 'Digital Media has a strong symbiotic relationship with the established film and TV sector, making Vancouver a creative force in North America' (www.vancouvereconomy.com/, accessed 24/2/10), and the BCFC expresses similar sentiments on its website. This convergence can be seen in different ways. On one level, animation, visual effects and video games are increasingly drawing on a common labour pool, a feature enhanced by the flexible, project-based nature of employment relations in all these sectors. On another, there are a range of emerging functional connections between firms in these different areas. Sound engineering, for example, has for a while now been an area of expertise that straddles film, cartoon and video game projects. Technological trajectories are also at play here, such as the increasingly interactive nature of television programming. One respondent spoke to both these aspects when he described how 'Electronic Arts is now thinking about getting into the movie business. So ... you can have somebody working on a visual effect in Stage 17 and then going to Electronic Arts and working on a game. Or now …the movie, it's integrated with animation and integrated with a video game. And so … we're just sort of starting to see that convergence model really happening: before we just talked about it' (personal interview, October 2009). A final area that may promote convergence relates to speculation among our respondents that financial incentives – particularly at the Federal level – may increasingly be tied to cross platform activities (e.g. film, website and video game) as 'the Harry Potter economy' (The Economist, 2009) of strong cross-branding continues to develop apace.

VII Conclusion

Our story of Vancouver's video game and film/TV clusters has been one of similarities, differences, and increasingly, interconnections. In terms of similarities, the industries are of comparable size in revenue terms, have similar geographies in terms of an inner city concentration along with suburban outposts, are highly dependent on inward investment and foreign capital, draw upon a large and successfully reproducing pool of creative and technical labour, are supported by provincial fiscal incentives and are loosely coordinated by strong and effective industry associations. International linkages and processes of firm fission are crucial to the growth and ongoing renewal of both clusters. Both can be thought of as *spontaneously generating* clusters – rather than being pre-planned – and are broadly *unmanaged clusters*, with management being collective and dispersed across a range of public and private sector actors.

In terms of differences, the film/TV industry has a longer history in BC, is significantly larger in employment terms, has a deeper and more longstanding reliance on fiscal subsidies, is characterised by strong trade union influence and does not exhibit large corporate entities in the production sphere at least – although the support segments such as postproduction, lighting and cameras have become increasing concentrated and externally owned. By contrast, the 'big' corporate actors in the film/TV industry – the US studios and TV networks act 'at a distance' and simply invest on a project-by-project basis. As the previous section has suggested, strong growth in the animation and visual effects areas in Vancouver seems to be leading a convergence between the industries, primarily in terms of the common labour pool being drawn upon, but also increasingly in tangible connections between firms. Moving beyond the broad characterisation of both clusters as unmanaged, there is a somewhat greater degree of central coordination within the film/TV sector, a feature that has developed over time and has been cemented by the formation of the industry association MMPIA.

What is clear is that both industry clusters have become highly significant components of Vancouver's media sector, and indeed, wider economy. We can point to three inter-related issues that are pertinent to both sectors as they move forward and raise interesting theoretical issues. First, as noted above, both the film/TV and video games industries have become heavily reliant on non-local sources of capital. While the long-term trajectory of the film/TV industry suggests this is not necessarily an impediment to success, it remains a somewhat precarious position, particularly in industries that invest in little fixed capital and are project-based in nature. In conceptual terms, it raises the intriguing question as to whether these industries can be seen to represent another version of Vancouver's old staples economy, albeit one based on a strong pool of talented and highly specialised labour. Second, the forms of both industries in Vancouver are different from those found in Canada's political and cultural urban heartlands of Toronto and Montreal, where both the state and Canadian corporate capital are more active participants (Vang and Chaminade, 2007). Clearly, this taps into wider debates surrounding Vancouver's arguably marginal place in the national cultural and political imagery (e.g. Pendakur, 1990). Third, both the film/TV and video game industries are now 'propped up' by significant government subsidies and tax breaks as BC has become involved in ratcheting-up rounds of tit-for-tat retaliation with other jurisdictions. This seemingly irrational 'quiet war' is premised on the assumption that the benefits of new spending and job creation will outweigh the expenditure, despite the evidence on the fiscal efficacy of incentives as the provincial level being somewhat mixed (e.g. InterVISTAS, 2005). In theoretical terms, it will be important to unpack the extent to which the geography of media industry production is increasingly 'finance following' (Morawetz, 2009) as producers seek to wrest maximum benefit from the dynamic landscape of public incentives (both within Canada and beyond).

In conclusion, what might be learned from the Vancouver experience? Three broad policy lessons stand out. Firstly, Vancouver's success has rested on the productive interplay of three sets of factors: basic locational attributes (e.g. close to Los Angeles, general appeal of the city), financial incentives (e.g. exchange rate differentials, fiscal incentives) and labour market attributes (not only the breadth and depth of the talent pool, but also the medium-term stability of labour costs). Policy interventions that focus on just one or even two of these pillars are not likely to yield success, as evidenced by the broad range of localities that offer tax incentives but have no significant games or film/TV industries. That same combination of factors has enabled Vancouver to sustain its position as a leading North American centre in both sectors for the past two decades, providing a resilience that has maintained business levels despite increased competition and external shocks (e.g. exchange rate shifts, Hollywood writer's strike, global recession). Hence, and secondly, Vancouver shows the medium-term viability of clusters built primarily on inward investment, suggesting that policy initiatives should be as much about fostering connections to key external sites of funding and creative influence as generating local 'buzz'. Thirdly, recent developments show the potential for policy interventions that deliberately target the intersections of these sectors – particularly in the areas of animation and special effects – as the multi-platform media world continues to develop apace.

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Figure 1: Vancouver's staples economy

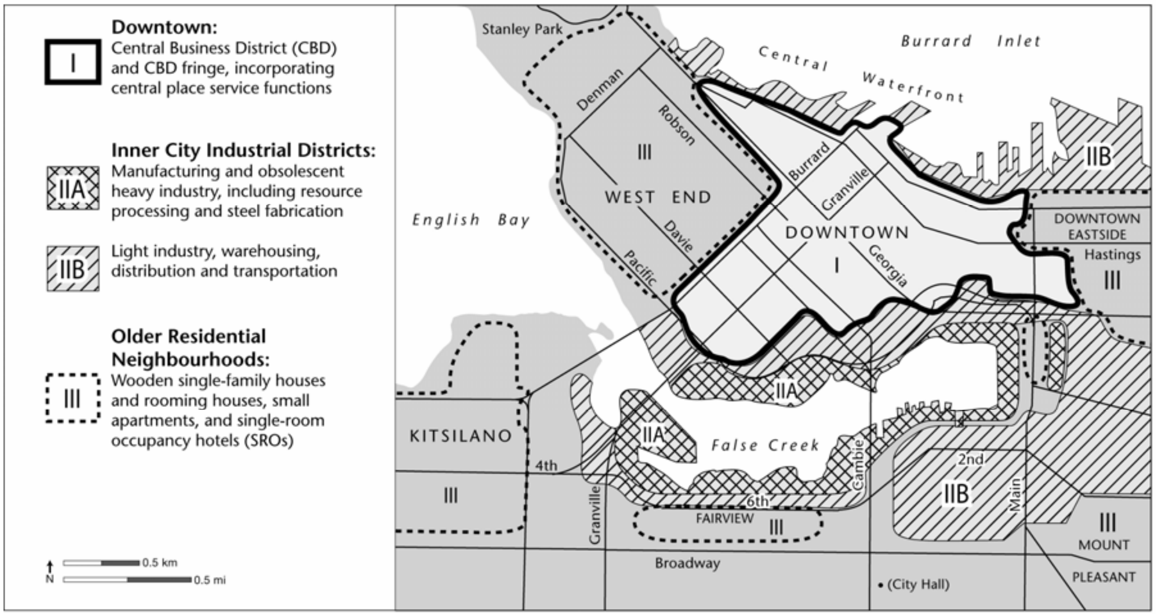


Figure 2: Vancouver's new media economy, 2004

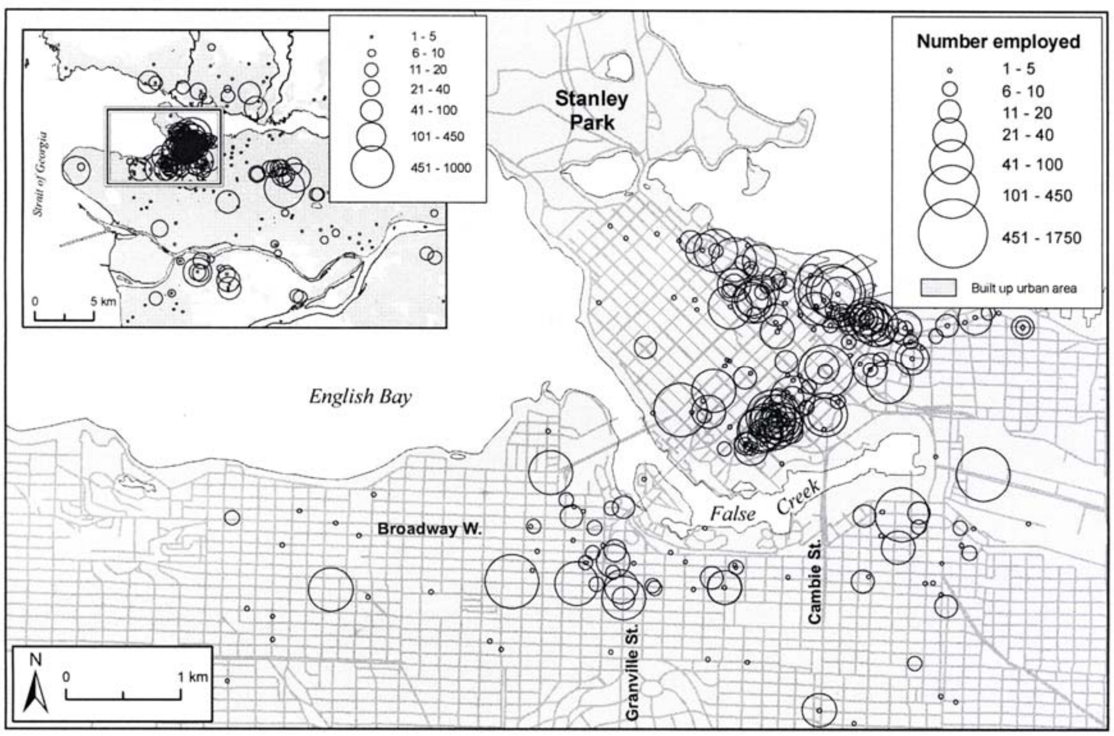


Figure 3: Firm fission in Vancouver's video game industry

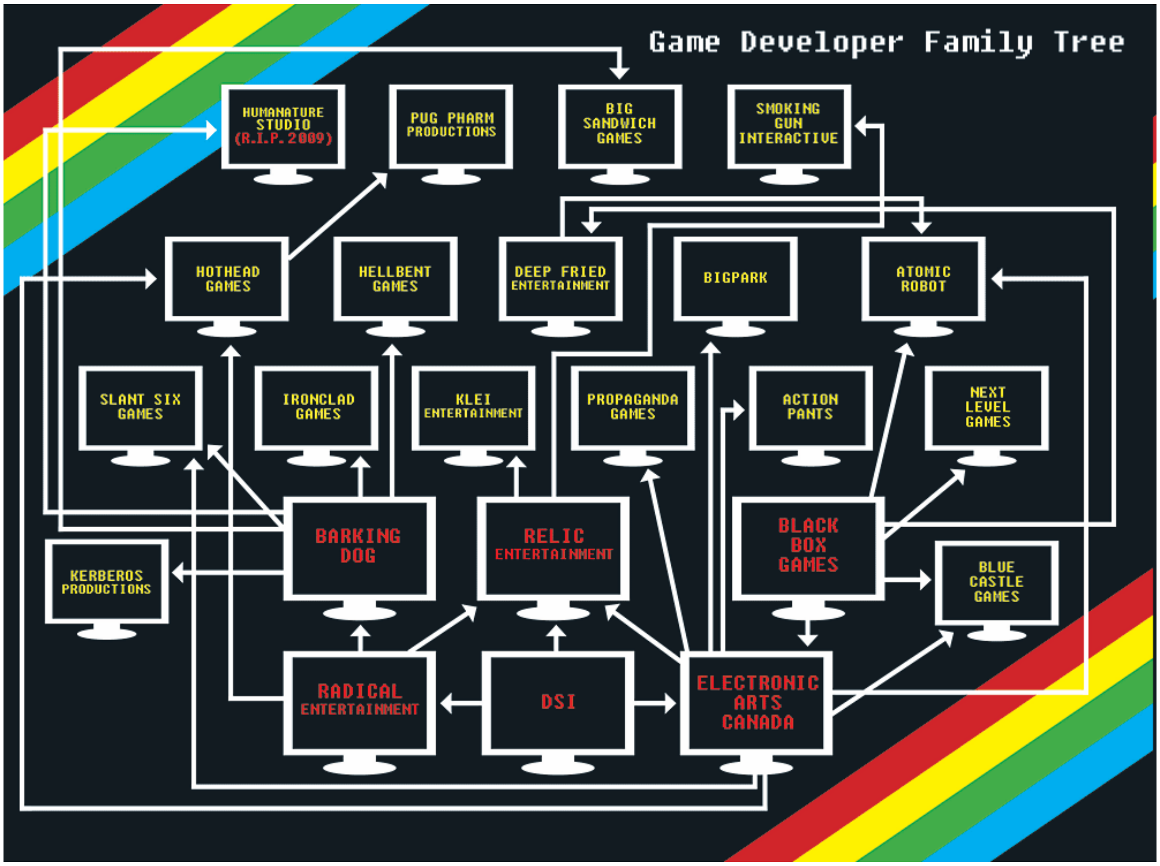
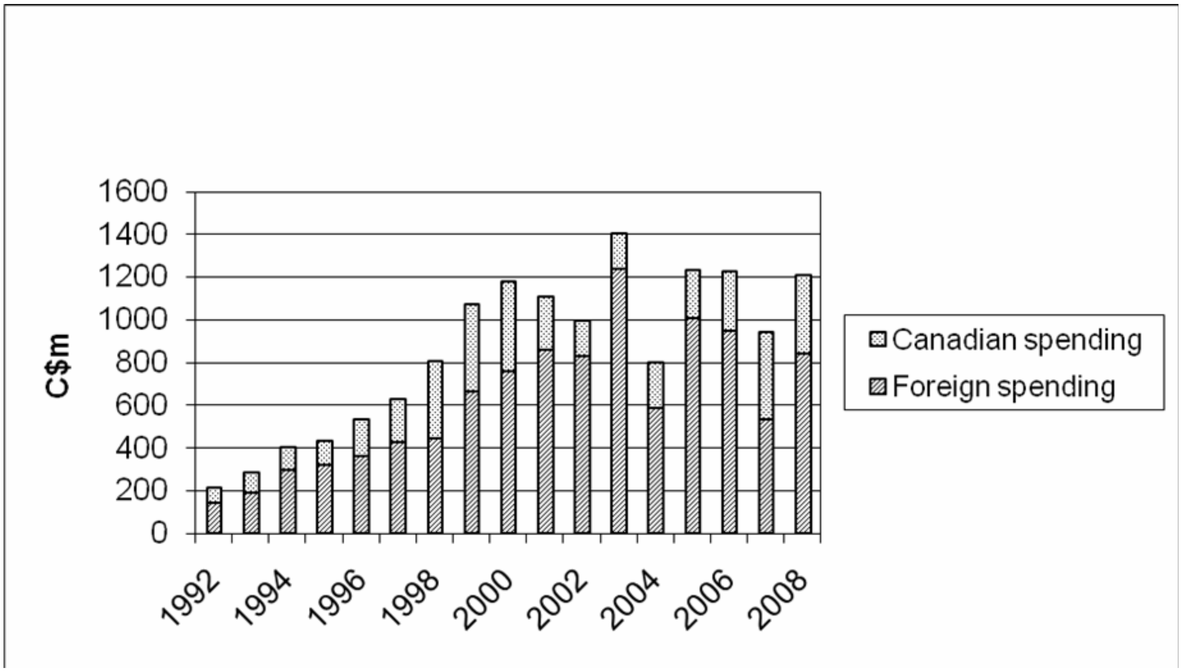


Figure 4: Video games companies within Vancouver's Metropolitan Area

Figure 5: BC film/TV industry revenues, 1992-2008



Source: http://www.bcfilmcommission.com/about_us/stats.htm

Figure 6: Film/TV production companies in the Vancouver Metropolitan Area

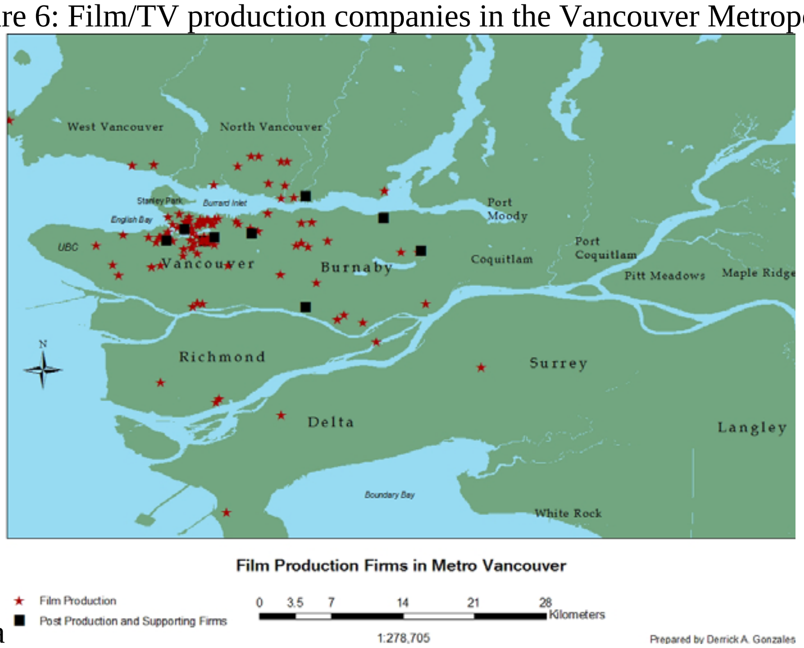
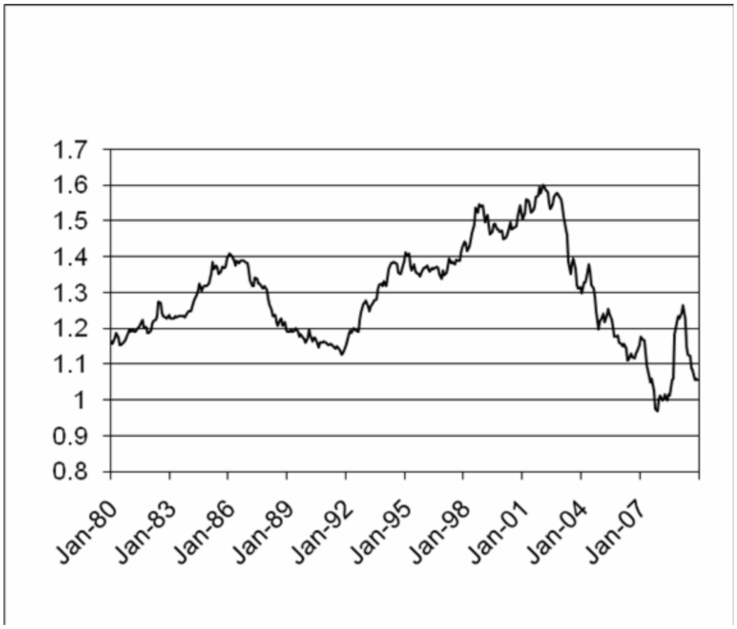
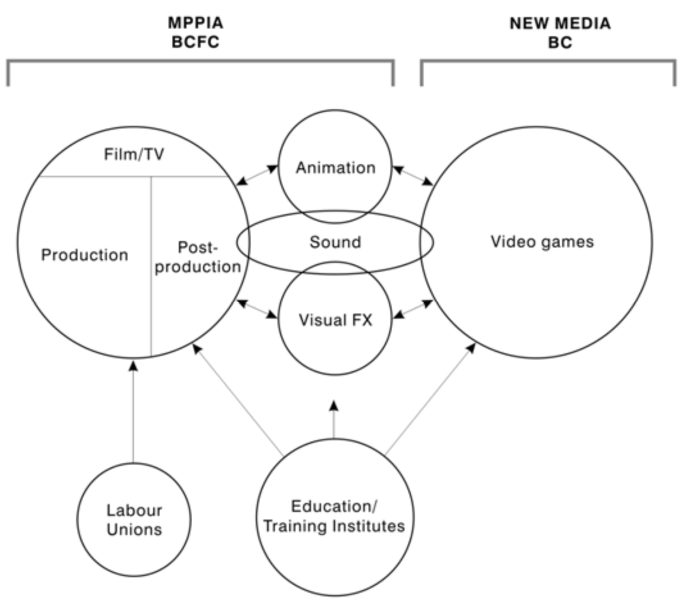


Figure 7: C$/US$ exchanges rates, 1980-2009, monthly averages



Source: derived from Pacific Exchange Rate Service (http://fx.sauder.ubc.ca)

Figure 8: Reconfiguring Vancouver's media sector – old meets new?



Source: authors' research.

Table 1: Breakdown of spending in BC film/TV industry in 2008.

Genre	Canadian (C$m)	No.	Foreign (C$m)	No.	Total (C$m)	No.
Features	83.7	25	441.5	40	525.2	65
TV series	82.8	42	320.8	14	403.6	56
TV movies, pilots and mini-series	92.3	46	53.3	16	145.6	62
Documentaries, shorts and animation	106.8	61	25.6	16	132.4	77
Totals	365.6	174	841.2	86	1,206.8	260

Source: BCFC (2009).