Niagara’s Interactive Digital Media (IDM) Industry

The words “industry” and “Niagara” are often used in tandem when discussing policy and everyday life in Niagara. However, few know that console games, augmented reality applications and geo-locative smartphone applications are made in Niagara. These are all products of a home-grown interactive digital media (IDM) industry that contributes to a larger international IDM economy and signals Niagara’s ability to create high-technology jobs.

In this policy brief, we benchmark (i.e., compare) the IDM industry in Niagara to the industry in Canada as a whole. This helps us understand Niagara’s position within Canada’s much larger IDM industry. Our data are drawn largely from online and archival sources, compiled between August 2012 and May 2013. These data were current as of 31 May 2013. We also suggest policies to help Niagara’s IDM industry prosper into the next decade.

What is IDM?

We conservatively define Interactive Digital Media (IDM) as media delivered in digital format (through computers, mobile phones or tablets, the Internet, gaming consoles or other platforms) designed to respond to input from one or more end-users. This definition encompasses media...
Abstract

In recent decades, Ontario has identified interactive digital media (IDM) as a young, high-growth industry worthy of taxpayer support. Defining IDM conservatively as media delivered in digital format (through computers, mobile phones, tablets, web-browsers, gaming consoles and other input devices) designed to respond to input from one or more end-users, in May 2013 Ontario had 188 active IDM firms. Our definition excludes print publishers, web-design firms, web-hosting firms, sound production, film production, television production, online content production, and special effects firms, all of which we consider to be part of a larger digital media economy. St. Catharines housed six active IDM establishments. Surprisingly, this placed St. Catharines in fourth place behind London, Ottawa and Toronto, with 15, 19 and 100 active IDM firms, respectively. The Greater Toronto Area housed 132 such firms. St. Catharines’ IDM economy appears to be characterized by a collaborative and entrepreneurial collection of small to medium-sized firms. We see this as a strength given Canada’s recent problems with large, subsidy-seeking multinational IDM firms bidding provinces off against each other at taxpayers’ expense. Because the Niagara Region houses collective infrastructure in the form of a well-equipped IDM incubator, Brock University and Niagara College, the larger Niagara Region is well-placed to expand its presence in this and the related digital media industry. To help expand its presence, we suggest five locally-focused policies. At the same time, we caution that the returns from public investment in this industry should only be assessed in the medium term, as these kinds of local economic development initiatives often take decades to bear fruit.

such as video games, educational or training software, augmented reality, and mobile applications. This definition does not include motion pictures, TV programming, webcasts or other broadcast media. Digital effects and digital animation firms which offer services strictly for the film and television industries are excluded from this definition. Traditional publishers are also not included.

IDM firms can be organized into five major categories: game-making firms; interactive technology firms; manufacturers; service providers; and software developers. Game-making firms develop digital games (i.e., software) for mass-market entertainment purposes. Some game-making firms not only develop their own intellectual properties, but also provide services to the IDM industry and assist client firms with developing their digital games. St. Catharines’ PixelNAUTS and Hamilton-based Snakehead Games are examples of game-making firms.

Interactive technology firms develop (and/or can be commissioned to develop) software, hardware or mobile applications for functional, educational or business purposes. Interactive technology firms can also develop technology for entertainment purposes (for example, motion-simulating movie theatres or sports training simulators). These firms, however, are distinguished from game-making firms in that their final product is not designed for mass markets. Examples of interactive technology firms include Nova Scotia-based Atlantis Systems International, a
maker of commercial and military training simulation software. Another is Ottawa-based CrowdWave, a designer of interactive software for the large video screens in sports arenas.

Manufacturers create physical components for use with interactive digital media content. San Diego’s Mad Catz Inc., for example, manufactures third-party controllers for console gaming. Woodbridge, Ontario-based Ganz Studios manufactures stuffed animals with a playable online counterpart.

Service providers provide services to the IDM industry. These services include software publishing and distribution, audio design, quality assurance, recruitment and more. Activision, Ubisoft and Electronic Arts are examples of firms that provide publishing and distribution services. Another example of a service provider is Smiley Guy Studios, a Toronto-based firm that recently provided animation services for the Canada Day webisode of Captain Canuck.

Software developers develop software made specifically for use by the IDM industry. An example is California-based Autodesk, creators of AutoCAD, a computer modeling and drafting program. The now defunct Montreal-based Softimage created the eponymous Softimage, a popular software program used for 3D animation.

The Interactive Digital Media (IDM) Industry in Canada

In Figure 2, we can see that Canada’s 466 active IDM firms are located unevenly across 10 provinces and one territory (i.e., Nunavut). The height of each bar represents the total number of active firms, whereas the black shading within each bar represents the number of those active firms which qualify as game-making firms. Figure 2 reveals that Ontario, British Columbia and Quebec have the most IDM firms in Canada. These three provinces also have the largest number of game-making firms.

Beyond being the three most populous provinces, Ontario, B.C. and Quebec house the country’s three metropolises, which are also Canada’s three largest IDM hubs: Toronto, Vancouver, and Montreal.¹ The Greater Toronto Area has the most IDM firms—132—many of which are eligible for the province’s Interactive Digital Media Tax Credit, which allows

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¹To give a sense of the impact these three cities have on the number of firms for each province, the Greater Toronto Area accounts for 132 of the 188 active IDM firms recorded for Ontario. Metro Vancouver accounts for 91 of British Columbia’s 108 active firms, and the Greater Montreal Area accounts for 64 of Quebec’s 84 active firms.
eligible IDM firms to claim 40% of labour costs and a maximum of $100,000 in marketing and distribution expenses, though only corporations with over one million dollars in labour costs are eligible. Similarly, Quebec offers the Production of Multimedia Titles tax credit, which allows eligible firms to claim up to 30% of labour costs, and up to 37.5% of labour costs if the firm creates a French-language version of their product. British Columbia began offering an IDM-specific tax incentive in 2010, but the credit only covers 17.5% of labour costs, and does not cover contract labour. The large number of IDM firms in British Columbia predates this tax credit, as the province attracted many multinational IDM firms in the 1990s and evolved a burgeoning industry. There are several potential explanations for the rise of the large firms in British Columbia before the institution of that tax credit. During the 1990s, the lower value of the Canadian dollar allowed large U.S. corporations to save money by developing games in Canada. This flight of jobs to Vancouver from Seattle, Redmond and Silicon Valley was also aided by all four locations sharing the same time zone. As Vancouver was already home to a film industry, the pool of film industry workers — many of whom possessed skills applicable to working in the video game industry — might have been an additional draw. This was coupled with provincial subsidies for film production, which often involved digital animation work. As physical distribution of CDs or cartridges was still the dominant method of selling finished games to consumers in the 1990s, opening subsidiaries in BC would have allowed American-owned firms to ship these products to Canadian stores without having to cross the border.

Regardless of the reasons for increasing numbers of large multinational firms in BC in the 1990s, the presence of large IDM firms there created additional demand for service providers and gave rise to spinoff firms. Thus, the historic presence of these multinationals might explain the high number of firms in British Columbia.

As Figure 3 indicates, approximately three-quarters of Canada’s IDM firms (for which we have employment data) employ fewer than fifty workers. Large IDM firms—those employing more than 500 people—represent less than 1.5% of active firms.

Frankly, this is a common pattern in most industries the world over. Still, large IDM firms may be less common because they seek out tax incentives and other benefits in exchange for short-term job creation, a trade-off not all provinces are willing to make.

![Number of Active IDM Firms in Canada by Size Category](image-url)

**Figure 3: IDM firms by size, 31 May 2013.**
Figure 4: Number of IDM Firms by Location in Ontario, 31 May 2013.

Figure 4 shows the number of firms located in various cities in Ontario, revealing that all of Ontario’s active IDM firms are located in the southern half of the province, with the majority located in and around the Greater Toronto Area. Data gathered on 188 active firms in Ontario have shown that the City of Toronto (which includes Old Toronto, Etobicoke, York, North York, East York and Scarborough) has the highest number of IDM firms in the province, with Ottawa and London having the second- and third-highest number of IDM firms, respectively. Figure 4 reveals St. Catharines’ prominence, having a high number of firms compared to many other locations.

The concentration of IDM firms around the Greater Toronto Area is supported by a range of IDM-specific public and private infrastructure. Toronto boasts multiple business and technology incubators in addition to two universities and five colleges that offer interactive digital media programs or courses (six, if Sheridan College’s Oakville campus is included). The second-highest number of firms is found in Ottawa, which was once known as the “Silicon Valley of the North” and is home to the Invest Ottawa and Exploriam.org business incubators. Ottawa also has two universities and two colleges that offer courses or programs relevant to the IDM industry. London, with the third-highest number of firms, is home to the Stiller Centre, Ontario’s largest technology incubator. London also houses IDM programs at Western University and Fanshawe College, and has private vocational schools which support the local Information Technology (IT) sector.

The Interactive Digital Media (IDM) Industry in St. Catharines and Niagara

St. Catharines has a lengthy history of involvement in the IDM industry in Canada, beginning with the incorporation of Silicon Knights in 1992. At one time, Silicon Knights was
the cornerstone of the IDM industry in St. Catharines, employing 180 people at the studio in its glory days. An extended legal battle with a larger firm seems to have precipitated Silicon Knights’ demise. Currently, St. Catharines houses six IDM firms.2

The City of St. Catharines is also home to Brock University and Niagara College, both of which provide entry-level IDM workers. The Interactive Arts and Sciences (IASC) Program at Brock University, launched in 2006, offers courses with a critical and theoretical focus in areas related to digital and social media, 3D online environments, computer games, and digital platforms. In 2011, Niagara College’s nearby Welland campus implemented an Advanced Diploma Program in Game Development. This three year program provides students with training in game programming, game design and development, 3D animation, game physics, artificial intelligence, game platforms, mobile gaming, and writing for the gaming industry. Their first cohort will graduate in Spring 2014. Brock and Niagara College are partnering to create GAME, a new video game studies program, in which students complete coursework at both institutions over four years.3

The Generator at One, a full-service production studio and incubation facility for IDM start-ups, is also located in St. Catharines. The Generator at One was founded in June 2010 to provide key infrastructure, retain IDM talent, and establish Niagara as a digital media hub. Tenants of the Generator at One—referred to as portfolio companies—are provided with low-rent office space, access to market data, and help with creating pitches and gaining access to funding. The incubation period lasts two to three years, after which the firm “graduates” from tenancy and becomes self-sufficient. The Generator at One is a valuable asset, as the firms that graduate from this facility become part of the IDM industry in Niagara. The assumption is that IDM firms will remain in Niagara because they will find doing business here easier than if they uproot themselves and move elsewhere where they have to develop a new set of contacts, ways of finding reliable workers, reliable sub-contracting partners and the like.

Interative Digital Media Policy in the Niagara Region

When the IDM industry in St. Catharines is compared to that of secondary hubs like London and Ottawa, compelling similarities emerge. Like London and Ottawa, St. Catharines houses an IDM incubation facility — The Generator at One — and has educational institutions — Brock University and Niagara College — which prepares workers for IDM work. The reader should bear in mind that we are not counting digital media firms, such as animation, film or special effects companies. These firms, while often serving as subcontractors or suppliers to IDM firms, technically do not create interactive content. Were we to do so, it would muddy our analysis.

Despite these similarities, London and Ottawa are home to somewhat more IDM firms (15 and 19, respectively) than the six housed in St. Catharines (as of 31 May 2013, the last time

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2 211 INTERACTIVE, Dragonchess Interactive Inc., Furi Enterprises Inc., morro images Inc., Phantom Compass, and PixelNAUTS.
3 Revised August 2014. The original May 2014 release of this policy brief noted that IASC was becoming GAME. In fact, IASC will continue operation as a distinct program.
we checked our data. Since our analysis, an additional firm has taken residence in The Generator at One). Even with just six firms, St. Catharines possesses assets which are attractive to IDM firms. The incubators in London and Ottawa, while they are larger and incubate more firms, are not IDM-industry specific like Niagara’s Generator at One. Also, The Generator at One houses one of the world’s few commercially rentable motion capture studios. This is a valuable asset for IDM firms, as the cost of such equipment can be prohibitive. And while St. Catharines has suffered the loss of what was considered to be its flagship firm — Silicon Knights — the cause of this firm’s collapse was highly unconventional, and should not be considered a reflection on the viability of the Niagara Region as an IDM hub.

While policy at the provincial level tends to focus on the implementation of tax incentives and other benefits to attract large IDM firms, an examination of the IDM industry in Ottawa and London indicates that the growth of an IDM hub is not necessarily dependent on the presence of a large firm. This is not to say that large IDM firms do not offer any benefits. Large IDM firms can produce spinoff firms, and provide greater demand for service-providing firms. Large IDM firms also employ large numbers of developers, who then might also exit the large IDM firm and start their own firms in the same location.

Unfortunately, because they are shareholder-driven, profit-maximizing entities, large IDM firms are fickle in terms of location. Indeed, much like Niagara’s history with Caterpillar and General Motors, large IDM firms have the potential to lay off large blocks of workers and relocate operations, with little consideration for local economic and social repercussions. British Columbia’s case is instructive: in the years following the 2008 recession, Electronic Arts (EA) closed their Vancouver studio and shed 600 employees. EA subsidiaries PopCap Vancouver and Quicklime Games also were closed, leaving 100 people unemployed. The closure of Humanature Studios by parent company Nexon left a further 98 people unemployed. Activision Blizzard subsidiary Radical Entertainment, the oldest video game studio in British Columbia, laid off 89 employees and now operates as a skeleton crew. Rockstar Games closed their British Columbia studio and moved 35 staff to a studio in Toronto, and Ubisoft closed their Vancouver studio after opening a new motion capture studio in Toronto.

As the last two closures indicate, the tendency to chase economic subsidies is another drawback of large IDM firms. Numerous sources point to the loss of IDM industry employment in British Columbia, blaming it on the more appealing tax incentives offered by Ontario and Quebec. This indicates the potential for large IDM firms to be footloose, seeking out regions where wage subsidies and other incentives are the most beneficial.

Furthermore, because many large IDM firms focus on the development of console games (e.g., for Xbox and PlayStation), they are subject to a yearly release schedule in which the weeks before Christmas and the weeks before the beginning of summer are the peak release times. As a result, developers and artists hired to work on console games may be laid off temporarily or permanently as soon as a project is completed. Thus, even if large IDM firms do not abandon a

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4 Estimate based on number employed at EA Vancouver and EA Burnaby as of December 2007.
location to restore corporate profitability or chase subsidies, these cyclical layoffs can still put a strain on local unemployment services, housing markets, and the like.

With this said, the firms in St. Catharines are, at present, very small (four of the six firms employ 10 people or less). As a result, Niagara’s IDM policies should be tailored to the actual conditions here. These are: a supply of locally-trained entry-level IDM workers, which should expand in number by 2014 as Niagara College graduates its first cohort; already existing digital media firms (to which we have only briefly alluded in this brief) that could serve as clients or sub-contractors in IDM projects; a well-equipped and competently staffed IDM incubator and attached business service centre; numerous paying, happy international clients of these existing IDM firms; and a small community of IDM entrepreneurs working on a range of projects.

Barring major catastrophes such as extreme exchange rate fluctuations or withdrawal of Ontario media tax credits, St. Catharines is poised to develop into a larger hub of IDM activity in the next decade.

**Five IDM policies for consideration**

Given these conditions, we propose five policies to assist the long-term competitiveness of the local IDM industry. First, to the degree possible, the Brock GAMES program should *open a competitive co-op program so that local IDM firms might be able to bring aboard paid co-op students*. Optimally, The Generator at One would be able to locate appropriate federal, provincial or local funding to cover any additional costs beyond those covered by the tax credit scheme that normally funds co-op positions at Ontario firms.

Second, the Niagara Region, City of St. Catharines, or a local benefactor should *discuss developing an emergency loan scheme for already-existing IDM firms needing to access monies already promised but not yet delivered by provincial or federal programs*. The interest on these loans could be used to grow the pool. It might also make sense to involve Niagara’s local Angel Investor Network in this program. Alternately, local firms could contribute to such a fund as well, and have some say in its disbursement. In any case, the proceeds from this fund would likewise be returned to the pool to be lent out to the next round of IDM entrepreneurs. In terms of retaining workers in the Region, such a funding scheme would enable these firms to avoid layoffs and remain in business to finish a project. In the long-run, this should lead to a larger number of IDM firms, and in turn, grow the number of IDM positions in the Niagara Region. Such a policy could help retain graduates from Brock University and Niagara College, thus preventing skilled IDM workers from leaving the Region. Alternately, these positions might entice skilled workers from outside the Region to move to Niagara, bringing potentially valuable industry experience and contacts.

Third, such a fund could *provide micro-financing to encourage and foster the development of new small IDM firms*, especially in cases where The Generator at One reaches tenancy capacity when it has identified other suitable candidates for tenancy. Even if these firms operated out of their founder’s home, knowing that they had a spot lined up at the incubator as well as access to the incubator’s resources might induce them to remain in the Region. Likewise,
this might be of use for serial IDM entrepreneurs whose first firm is sold off, closes or declares bankruptcy, as they could then still rapidly turn their talents and contacts toward creating a new, viable IDM firm.

Fourth, it would be beneficial to develop a community-wide procedure for conducting a ‘post-mortem’ on closed firms, bankrupted firms and rejected projects. This would enable the local IDM community to better learn from these often traumatic experiences. Such a post-mortem should help in that even as competition culls these candidates, more competitive survivors should be left behind as they learn from the post-mortem. In turn, the local IDM industry should become increasingly more stable as best business practices diffuse to less efficient firms. To the degree that these IDM firms continue to collaborate, the net effect should be to increase not just the flow of knowledge between firms but also to expand the local IDM industry’s ability to capture ever larger projects by building on examples of past local collaborations. While we heard anecdotes suggesting this is already happening, extending ‘post-mortems’ to explore positive events (e.g., how these collaborations took place) would also contribute to the hub’s long-term collective capacity to attract projects. Furthermore, these policies would contribute to the maintenance of an entrepreneurial IDM atmosphere first awakened in St. Catharines by Silicon Knights.

As the number of firms increases, and in turn the number of positions increases, this should also attract skilled developers from throughout the GTA and beyond. A 2012 study by Nouri and Rantisi has shown that game developers in Montreal are attracted to areas with multiple job opportunities and the opportunity to choose from a variety of projects to work on. Just as importantly, that study finds that amenities (as followers of Richard Florida suggest) were not the reason these workers gave for their move to Montreal. Following this logic, a larger number of available positions in the IDM industry should make Niagara a more attractive destination for talented developers, animators and the like. However, any policy in regards to these suggestions should take a long-term view, as a culture of entrepreneurship cannot develop overnight. In particular, any funding schemes must have clear benchmarks that firms meet to receive continued assistance. Without such clear benchmarks, assistance programs risk creating a local IDM culture marked by corporate-welfare dependency instead of entrepreneurialism.

In the development of this entrepreneurial atmosphere, the importance of continued collaboration between the supporting institutions — Brock University, Niagara College, The Generator at One — and the IDM industry, is paramount. Likewise, these three supporting institutions must develop the capacity to engage in potentially painful self-reflection. By doing so, they will be better prepared to deliver services that are actually in demand and proven to have worked elsewhere. Clearly, Brock’s retooling of its IASC to the GAME program has already done so. This is admirable, as the industrialized world is replete with stories of ossified industrial communities incapable of responding to changing local and national markets. With that said, this capacity for self-reflection also must be understood as a means for charting a new path, and not a justification for closing programs.
Our final policy suggestion is to *foster a local culture of coding*. Even in this day and age, where so many Canadians use devices that rely on computer code, relatively few are able to overcome their fear of technology to ‘peek beneath the hood’ of their laptop or cell phone. This sort of ‘peeking,’ and the propensity to do so, is alleged to drive innovation in many economies dominated by small and medium-sized firms. One way to foster such a curiosity is to provide a structured environment in which novices can learn to code. While some favor the creation of Maker Spaces or Hacker Spaces, we propose something less costly: the creation of chapters of organizations such as Ladies Learning Code (see [www.ladieslearningtocode.com](http://www.ladieslearningtocode.com); men are welcome, too) that will foster an interest in coding, as well as provide a safe environment in which novice coders can learn-by-doing and develop the fortitude to continue coding more difficult projects. Software Niagara, drawing from the experiences of Software Hamilton, is one such local organization that could provide a seedbed of future local coders.

In conclusion, St. Catharines (and by default, Niagara) possesses three key assets which give the Region the potential to develop into a medium-sized IDM industry hub like London or Ottawa. In North America, *this is a rare position to hold*. Importantly, this potential does not hinge upon the need to attract multinational IDM firms to the Region. Policies assisting local IDM firms with growth and expansion may help to stem the flow of skilled IDM graduates from Niagara, and may attract skilled labour from other locations. Continued support of The Generator at One, Brock’s IASC/GAME program, and Niagara College’s video game program are key to this growth which, in turn, lays the foundations for a larger, more stable, and more specialized IDM hub in Niagara.
References


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